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DOCUMENTS

OF THE

CITY OF BOSTON,

FOR THE YEAR 1873.

IN FOUR VOLUMES.

VOLUME IV.

CONTAINING DOCUMENTS FROM No. 99 TO No. 141, INCLUSIVE.

Published by Order of the City Government.

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1874.

INDEX TO VOLUME I.

Document No. 1.

Mayor's Address to the City Council. January 6, 1873.

Document No. 2.

Municipal Register.

Document No. 3.

Auditor's Monthly Exhibit. January 7, 1873.

Document No. 4.

Street Commissioners. Annual Report of. January 20, 1873.

Document No. 5.

City Surveyor. Annual Report of. January, 1873.

Document No. 6.

Weights and Measures. Annual Report of the Sealers. January 8, 1873.

Document No. 7.

Public Buildings. Superintendent's Annual Report. January 1, 1873.

Document No. 8.

Lamps. Superintendent's Annual Report. January 13, 1873.

Document No. 9.

Police. Annual Report of the Chief. January 10, 1873.

Document No. 10.

Public Lands. Superintendent's Annual Report. January 13, 1873.

Document No. 11.

Sewers. Request for Additional Appropriation for.

Document No. 12.

Boston and Cambridge Bridges. Second Report of Commissioner. January, 1873.

Document No. 13.

Sewers. Superintendent's Annual Report. January, 1873.

Document No. 14.

Charles River and Warren Bridges. Report of Commissioner. January, 1873.

Document No. 15.

Devonshire Street. Widening of, from Summer Street to Franklin Street. January 23, 1873.

Document No. 16.

Otis Street. Widening of. January 23, 1873.

Document No. 17.

Bedford Street. Widening of, between Washington Street and Chauncy Street. January 23, 1873.

Document No. 18.

Sinking Fund. Report of the Commissioners on. January 24, 1873.

Document No. 19.

City Hospital. Request for Additional Appropriation for. January 28, 1873.

Document No. 20.

Elections. Report of Committee on Petition in relation to the seat occupied by George A. Shaw. January 16, 1873.

Document No. 21.

Streets. Superintendent's Annual Report. January, 1873.

Document No. 22.

Printing. Request for an Additional Appropriation for.

Document No. 23.

City Engineer. Annual Report of. January 20, 1873.

Document No. 24.

Auditor's Monthly Exhibit. February 5, 1873.

Document No. 25.

Oliver Street. Extension of to Kilby Street. February 27, 1873.

Document No. 26.

Milk Street. Widening of. February 27, 1873.

Document No. 27.

Salaries. Report of the Committee on. April 1, 1873.

Document No. 28.

Inspector of Buildings. Annual Report of. January 1, 1873.

Document No. 29.

Water. Report on additional supply, March 13, 1873.

Document No. 30.

Franklin Street. Widening and Extension of. Feb. 27, 1873.

Document No. 31.

Federal Street. Widening of. Feb. 27, 1873.

Document No. 32.

Pearl Street. Widening and Extension of. Feb. 27, 1873.

Document No. 33.

Congress Street. Widening of, between Water Street and Broad Street. Feb. 27, 1873.

Document No. 34.

Auditor's Estimates. 1873-4.

Document No. 35.

Arch Street. Widening and Extension of. March 17, 1873.

Document No. 36.

Cedar Grove Cemetery. Annual Report of the Commissioners. March 3, 1873.

Document No. 37.

Auditor's Monthly Exhibit. March 5, 1873.

Document No. 38.

Water. Communication from Board in relation to High Service. March 26, 1873.

Document No. 39.

Water. Request for an Additional Appropriation for. March 10, 1873.

INDEX TO VOLUME II.

Containing Documents from No. 40 to No. 69 inclusive.

Document No. 40.

Health. Superintendent's Annual Report. Feb. 17, 1873.

Document No. 41.

Hawley Street. Widening of. March 17, 1873.

Document No. 42.

Fire Department. Request for an Additional Appropriation for.

Document No. 43.

Fire Department. Report on Increasing Efficiency of. March 13, 1873.

Document No. 44.

Schools. Request for an Additional Appropriation for.

Document No. 45.

Auditor's Estimates. Report of Joint Special Committee on. March 20, 1873.

Document No. 46.

Burrill Claim. Majority and Minority Reports on. March 13, 1873.

Document No. 47.

Pearl, Congress and Milk Streets. Widening of. April 14, 1873.

Document No. 48.

Salaries. Second Report of the Committee on. March 24, 1873.

Document No. 49.

Quincy Place, Extension of. March 24, 1873.

Document No. 50.

Summer Street Fire Loan. Report of Commissioners on. March 17, 1873.

Document No. 51.

Great Fire. Report of the Commissioners appointed to investigate the cause and management of. Nov. 15, 1872.

Document No. 52.

Streets. Request for an Additional Loan. March 20, 1873.

Document No. 53.

Congress Street. Widening of, between Water Street and State Street. March 27, 1873.

Document No. 54.

Ninth U. S. Census. Statistics compiled from relating to Boston.

Document No. 55.

William L. Burt, Postmaster. Communication from, respecting streets around New Post Office.

Document No. 56.

Inspector of Milk. Fourth Annnal Report of. 1873.

Document No. 57.

Water Street. Widening of, between Devonshire Street and Congress Street. April 14, 1873.

Document No. 58.

Fire Department. Thirty-fifth Annual Report of. Jan. 1, 1873.

Document No. 59.

Auditor's Monthly Exhibit. April 5, 1873.

Document No. 60.

Bedford Street. Widening of, between Summer Street and Kingston Street. April 21, 1873.

DOCUMENT NO. 61.

Suffolk-street District. Request for an Additional Appropriation for. April 18, 1873.

DOCUMENT NO. 62.

Fire Insurance Districts. Report on. May 12, 1873.

DOCUMENT NO. 63.

Congress Street. Widening of, between Water Street and State Street. May 5, 1873.

DOCUMENT NO. 64.

Small-Pox Hospital. Report on Claim of the Contractors for the erection of. April 28, 1873.

DOCUMENT NO. 65.

Mayor's Message. Returning without his approval the Order to provide Accommodations for the Normal School. May 1, 1873.

DOCUMENT NO. 66.

Highland Street Railway. Second Location. May 5, 1873.

DOCUMENT NO. 67.

Broad Street. Widening of. June 9, 1873.

DOCUMENT NO. 68.

Auditor's Monthly Exhibit. May 10, 1873.

DOCUMENT NO. 69.

Metropolitan Railroad. Thirty-fourth Location. May 12, 1873.

INDEX TO VOLUME III.

CONTAINING DOCUMENTS FROM No. 70 TO No. 98 INCLUSIVE.

DOCUMENT No. 70.

Charles Burrill. Report of the Committee on Claims on the Petition of. May 22, 1873.

DOCUMENT No. 71.

South Boston Flats. Report on the Occupation of. May 26, 1873.

DOCUMENT No. 72.

City Registrar. Annual Report of Births, Marriages and Deaths. 1873.

DOCUMENT No. 73.

Small-pox Hospital. Alderman Quincy's Minority Report on Claim of contractors. May 19, 1873.

DOCUMENT No. 74.

Leases. Report of Auditor of Accounts on. May 1, 1873.

DOCUMENT No. 75.

Overseers of Poor. Annual Report. May 22, 1873.

DOCUMENT No. 76.

Public Institutions. Sixteenth Annual Report of the Board of Directors for. May 23, 1873.

DOCUMENT No. 77.

Water. Report of Committee on, for Additional Water Pipes, also for the Construction of Parker Hill Reservoir.

DOCUMENT No. 78.

Mount Hope Cemetery. Fifteenth Annual Report of Board of Trustees for. May, 1873.

Document No. 79.

Auditor's Annual Report. 1872–3.

Document No. 80.

Federal Street Bridge. Request for an Additional Appropriation for. June 3, 1873.

Document No. 81.

East Boston Ferries. Third Annual Report of Directors. May 29, 1873.

Document No. 82.

Auditor's Monthly Exhibit. June 7, 1873.

Document No. 83.

Harrison Avenue. Widening of. June 12, 1873.

Document No. 84.

Health. First Annual Report of Board of.

Document No. 85.

Gas. Report of State Inspector on Quality of. May 5, 1873.

Document No. 86.

Washington Street. Widening of between Boylston Street and Avery Street. June 30, 1873.

Document No. 87.

Essex Street. Widening of, between Washington Street and Harrison Avenue. June 30, 1873.

Document No. 88.

Public Library. Annual Report of Trustees for. June 25, 1873.

Document No. 89.

Annexation Acts. Relating to Brighton, Brookline, Charlestown, and West Roxbury. June 16, 1873.

Document No. 90.

Oration, July 4. By Rev. John F. W. Ware.

Document No. 91.

Auditor's Monthly Exhibit. July 5, 1873.

Document No. 92.

Water. Report of Board on Extension of Water Pipes. July 7, 1873.

Document No. 93.

Artillery. Report on Discharge of, on the Common. July 7, 1873.

Document No. 94.

Sewerage. Report on the Present System of, in the City of Boston. September 1, 1873.

Document No. 95.

City Solicitor. Annual Report of. June 30, 1873.

Document No. 96.

Sinking Fund. Report of Commissioners on. July 21, 1873.

Document No. 97.

Fire Department. Reorganization of, and Report and Evidence on the cause of the Fire, May 30, 1873.

Document No. 98.

Streets. Assessment of Betterments on Dudley Street and other streets. 1873.

INDEX TO VOLUME IV.

Containing Documents from No. 99 to No. 141, Inclusive.

Document No. 99.

City Hospital. Ninth Annual Report of Trustees of. April 30,1873.

Document No. 100.

Wooden Pavements. Report of the Commission appointed to Investigate the Matter of.

Document No. 101.

Auditor's Monthly Exhibit. August 6, 1873.

Document No. 102.

Inspectors of Prisons. First Semi-Annual Report of. August 25, 1873.

Document No. 103.

Water Board. Annual Report of. April 30, 1873.

Document No. 104.

Auditor's Monthly Exhibit. September 3, 1873.

Document No. 105.

Annexation. Report of the Commission appointed to Investigate the Subject of. 1873.

Document No. 106.

Fire Department. Minority Report of the Committee on Reörganization of. September 4, 1873.

Document No. 107.

Fire Department. Recommendations of the Joint Standing Committee on. September 4, 1873.

Document No. 108.

Home for the Poor. Reports of Committee on Public Institutions on a site for. September 8, 1873.

Document No. 109.

Fire Department. Ordinance recommended by the Committee on Reorganization of. September 11, 1873.

Document No. 110.

Metropolitan Railroad. Thirty-fifth Location. September 22, 1873.

Document No. 111.

Prescott Street, Widening of from Trenton Street to Eagle Street. September 27, 1873.

Document No. 112.

Water. Report of Cochituate Water Board on Supply for Extinguishing Fires. September 12, 1873.

Document No. 113.

Markets. Request for an Additional Appropriation for. September 29, 1873.

Document No. 114.

Printing. Third Annual Report of Superintendent of. September, 1873.

Document No. 115.

City Charter. Report of Committee on Revision of. September 29, 1873.

Document No. 116.

Auditor's Monthly Exhibit. October 3, 1873.

Document No. 117.

Fire Department. Ordinance in Relation to. October 6, 1873.

Document No. 118.

Regimental Armories. Report on Proposed Establishment of. October 9, 1873.

Document No. 119.

Fire Department. Ordinance to Establish. Passed by Board of Aldermen, October 13, 1873.

Document No. 120.

Kneeland Street. Betterments for Widening of. 1873.

Document No. 121.

Sewers. Request for an Additional Appropriation for. Nov. 3, 1873.

Document No. 122.

Auditor's Monthly Exhibit. November 4, 1873.

Document No. 123.

Fire Department. Final Report of Joint Standing Committee on. November 10, 1873.

Document No. 124.

Magazine Street. Widening of. November 22, 1873.

Document No. 125.

Eustis Street. Extension of. November 22, 1873.

Document No. 126.

Common, etc. Request for Additional Appropriation for. November 20, 1873.

Document No. 127.

Chelsea, etc. Report on proposed Annexation of, to Middlesex County.

Document No. 128.

Broadway Bridge. Report of City Engineer on Proposed Repairs of Draw. November 17, 1873.

Document No. 129.

Legislative Matters. Report of Committee on. December 1, 1873.

Document No. 130.

Relief of Poor. Mayor's Message in Relation to. November 25, 1873.

Document No. 131.

Public Buildings. Request for an Additional Appropriation for. December 1, 1873.

Document No. 132.

Auditor's Monthly Exhibit. December 3, 1873.

Document No. 133.

Pearl Street. Widening of. December 15, 1873.

Document No. 134.

Water. Report of Board on Supply of. Quality of Mystic Water, etc. January 7, 1874.

Document No. 135.

Bathing. Annual Report of Committee on. December 29, 1873.

Document No. 136.

Suffolk Street and other Streets. Report on Raising the Grades of. December 22, 1873.

Document No. 137.

Inspectors of Prisons. Second Semi-annual Report of. January 1, 1874.

Document No. 138.

School Committee. Annual Report for the year 1872.

Document No. 139.

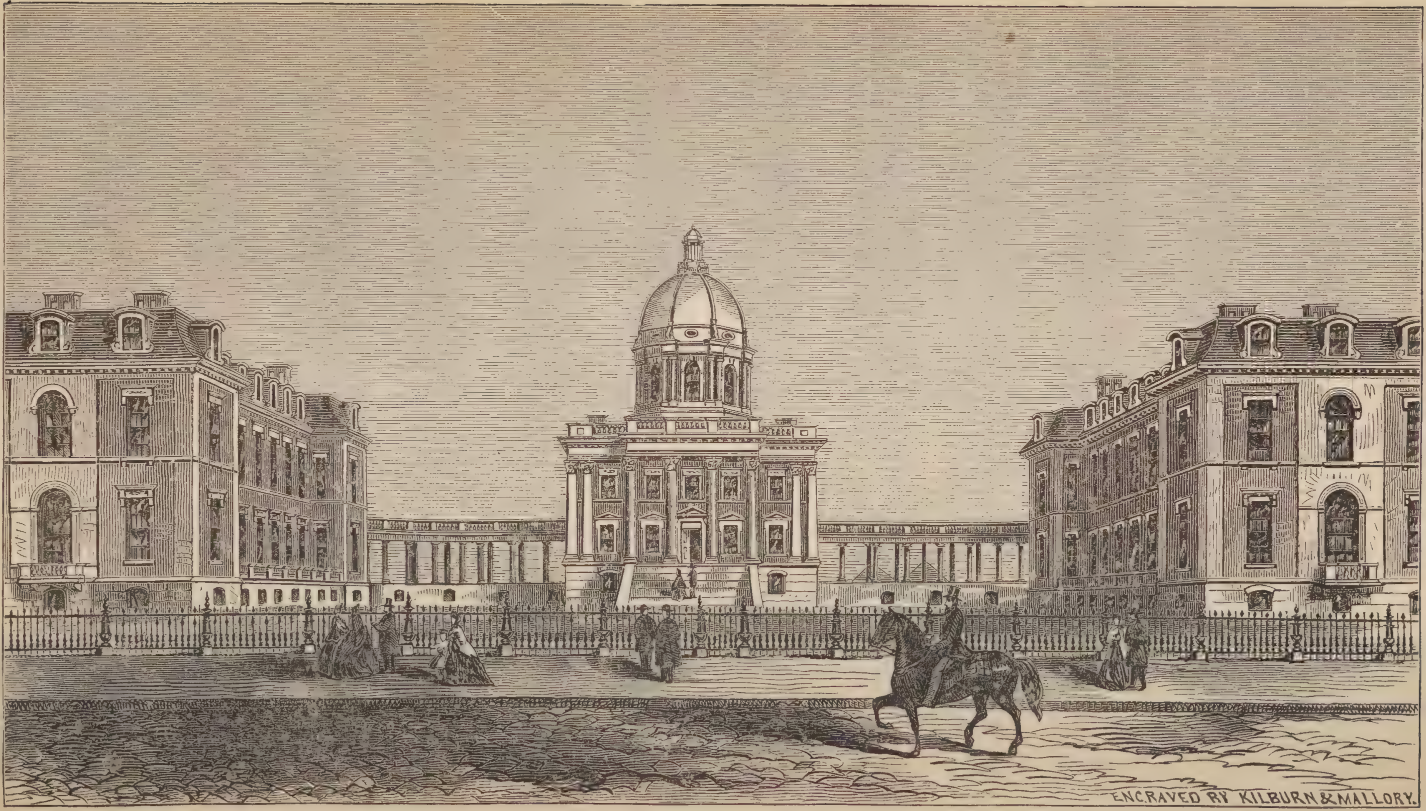
Common Council. Proceedings at its last Meeting. January 1, 1874.

Document No. 140.

Public Institutions. Report of Directors for, on the subject of their Rules for Religious Instruction to Inmates. January 1, 1874.

Document No. 141.

Board of Aldermen. Proceedings at its last Meeting. January 3, 1874.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FRONT VIEW OF THE HOSPITAL FROM HARRISON AVENUE.

NINTH REPORT

OF THE

TRUSTEES OF THE CITY HOSPITAL,

BOSTON;

WITH

REPORTS OF THE SUPERINTENDENT AND PROFESSIONAL STAFF, RULES FOR ADMISSIONS AND DISCHARGES, Etc.

BOSTON:
ROCKWELL & CHURCHILL, CITY PRINTERS,
122 Washington Street.
1873.

BOARD OF TRUSTEES FOR 1872–73.

ALDERMAN — THOMAS L. JENKS,
COUNCILMEN — STEPHEN L. EMERY,
WASHINGTON L. PRESCOTT, } *Term expired Jan.*, 1873.

AT LARGE — ELIJAH C. DREW, *President*,
WILLIAM A. RUST,
GEORGE W. POPE,
CHARLES J. PRESCOTT,

PATRICK A. COLLINS, } *Term expired May*, 1873.

JOHN GOLDTHWAIT,
THOMAS L. JENKS, } *Elected April*, 1873.

ALDERMAN — JAMES POWER,
COUNCILMEN — TIMOTHY J. DACEY,
JAMES F. MARSTON, } *Elected January*, 1873.

EDWARD COWLES, *Superintendent and Resident Physician.*

MEDICAL AND SURGICAL STAFF.

CONSULTING PHYSICIANS AND SURGEONS.

Edward Reynolds, M.D.
Winslow Lewis, M.D.
John Jeffries, M.D.
Silas Durkee, M.D.
Benj. E. Cotting, M.D.
Charles E. Buckingham, M.D.

VISITING PHYSICIANS.

J. N. Borland, M.D.
J. G. Blake, M.D.
Hall Curtis, M.D.
Wm. Read, M.D.
Geo. H. Lyman, M.D.
C. Ellery Stedman, M.D.
Robert T. Edes, M.D.
George J. Arnold, M.D.

VISITING SURGEONS.

Chas. D. Homans, M.D.
David W. Cheever, M.D.
W. H. Thorndike, M.D.
W. C. B. Fifield, M.D.
William Ingalls, M.D.
George W. Gay, M.D.

OPHTHALMIC SURGEONS.

Henry W. Williams, M.D.
Oliver F. Wadsworth, M.D.

PATHOLOGIST. — William P. Bolles, M.D.

PHYSICIANS TO OUT-PATIENTS.

O. W. Doe, M.D.
A. L. Haskins, M.D.

DEPARTMENT FOR SKIN DISEASES, OUT-PATIENTS.

H. F. Damon, M.D.

DEPARTMENT FOR EAR DISEASES, OUT-PATIENTS.

J. Orne Green, M.D.

ASSISTANT SURGEONS TO OUT-PATIENTS.

Frank W. Draper, M.D.	Norman P. Quint, M. D.

MEDICAL HOUSE OFFICERS.

M. A. Morris. Henry R. Stedman. A. L. Foster.

OPHTHALMIC INTERNE. — Francis Atwood.

SURGICAL HOUSE OFFICERS.

J. R. Morgan. W. P. Hammond. G. W. Clement.

OPHTHALMIC EXTERNE. — J. F. Gouch.

REPORT OF THE BOARD OF TRUSTEES.

City Hospital, Boston, April 30, 1873.

To the Honorable City Council: —

Gentlemen: — The Board of Trustees of the City Hospital, in compliance with the Ordinances, respectfully present herewith their Ninth Annual Report.

Number of Patients remaining in the Hospital, April 30, 1872		223
Admitted during the year, —		
Medical	1,667	
Surgical	1,339	
Ophthalmic	78	
Small-pox	220	
		3,304
Treated during the year		3,527
Discharged	2,942	
Died	351	
		3,293
Remaining in Hospital, April 30, 1873		234

Largest number in Hospital at any time	264
Smallest number in Hospital at any time	172
Daily average number of patients	218
Average length of stay of each patient	days 22½

In the department for out-patients, there were treated : —

Medical patients	2,602
Surgical “	2,386
Ophthalmic“	1,519
Cutaneous “	809
Aural “	210
Total	7,526

Number of visits made by out-patients to the Hospital : —

Medical	3,597	
Surgical	5,820	
Ophthalmic	8,601	
Cutaneous	2,763	
Aural	1,297	
		22,078

The accompanying reports of the physicians and surgeons in attendance upon the Hospital are transmitted herewith, and furnish tabulated statements of all the cases, with their results, treated during the year, which reach a total of 11,035 in all the departments of the Hospital.

The report of the Superintendent and Resident Physician gives further information regarding the work accomplished at the Hospital, in the case of those who have sought its benefits, and exhibits also a statement in detail of the expenditures made in maintaining it.

The number of patients in the Hospital during the year, 3,527, were under treatment at an average of $22\frac{1}{2}$ days each, making a total of 79,570 days or $11,367\frac{1}{7}$ weeks. The entire cost of maintaining the Hospital for the year, including every expenditure, and the unexpected expenses incurred in the small-pox department, was at the rate of

$10 $60\frac{1}{2}$ per week	$120,552 65
But of the patients enumerated above, 146 paid for 263 weeks' board . . .	3,948 64
Leaving, therefore, the sum of . .	$116,604 01

as the cost to the city of treating 3,381 patients, for a period of 11,104$\frac{1}{7}$ weeks, which is at the rate of $10.50 per week. The cost of taking care of 229 patients in the small-pox department of the Hospital during the recent epidemic, and not provided for in the appropriation for the year, amounted to $10,219.93, or 22.64\frac{1}{2}$ per week for 451$\frac{2}{7}$ weeks. Deducting this expenditure and estimating the average cost of maintaining each patient, in all the departments of the Hospital proper, in the same manner as above, it will appear that there was expended the sum of $107,783.24, as the cost to the city of treating 3,229 non-paying patients for 10,743$\frac{5}{7}$ weeks at the rate of $10.03 per week. The expense of maintaining the out-patient departments, estimated at $1,500 to $2,000, has not been deducted in making these statements.

The increase in the amount of the expenditures for the year was caused, in some degree, by the greater number of patients treated, but chiefly by the large expenses on account of the Small-pox Hospital, that had not been anticipated in making the appropriation for the year, which was $107,000. It, therefore, became necessary to ask the Government for a special appropriation of $11,500, to cover the additional cost of maintaining the Small-pox Hospital till it was discontinued in August.

The increase in the number of patients treated in the Hospital has gone on during the past as in former years, the daily average for the year being 218 patients, nearly 12 per day in excess of the number treated in any previous year. To speak of the difficulties of management that rapidly multiply as the numbers increase above the proper capacity of the wards of the Hospital, and to urge the necessity of more room for the sick, would only be to repeat the representations of the Board of Trustees in their reports of former years. There is also still the very pressing need of additional accommodations for the surgical department, both of rooms for out-patients and of a more commodious and convenient operating-room. The Trustees forbear to urge the immediate attention of the Government to this matter, only because of the extraordinary demands that are being made upon it, in consequence of the recent disaster and loss that has befallen the city. It is believed, however, that as a matter of economy deserving early attention, the heating apparatus should, during the coming summer, undergo the thorough repairing that is now needed after nine years' constant use.

The vacancies in the Medical Staff, existing at the beginning of the year, caused by the resignations of Dr. Fitch E. Oliver, as Visiting Physician, and Dr. D. McB. Thaxter, as Visiting Surgeon, were filled by the election of Dr. Robert T. Edes as Visiting Physician, and Dr. George W. Gay, as Visiting Surgeon. The resignation of Dr. John P. Reynolds, as Visiting Physician, having been presented and accepted, Dr. George J. Arnold was elected in his place.

Dr. S. G. Webber having declined to be a candidate for re-election, as Pathologist, Dr. W. P. Bolles was chosen in his stead.

Dr. M. E. Webb was elected as Visiting Physician in the small-pox department, and was in attendance from May 1st till August 27th, when the department was discontinued by order of the Government.

In the month of May, at the first meeting of the Board of Trustees, a communication was received from Mr. L. A Cutler, tendering the resignations of Mrs. Cutler, as Matron, and Miss Anna M. Cutler, as Assistant Matron, also declining to be considered a candidate for re-election as Superintendent for the year ensuing. On the 1st of July following, the connection of these officers with the Hospital terminated, after eight years of constant and honorable service. At their meeting on the 11th of June, the following resolutions were passed by the Trustees: —

Resolved. That the cordial thanks of the Board are hereby tendered to Lucius A. Cutler, Esq., for his long, faithful, and arduous services as Superintendent of this Hospital, and as the time approaches when Mr. Cutler's connection with the Hospital is to end, the Board expresses the wish and hope that success and happiness may attend his efforts in the future.

Resolved, That a copy of these resolutions be engrossed, and transmitted to Mr. Cutler.

Resolved, That the thanks of this Board be presented to Mrs. Cutler and Miss Cutler, for their faithful services as Matron and Assistant Matron.

It thus became the duty of the Trustees, in the first months of their connection with the Hospital, to fill important positions by the election of new officers, as well as to take upon themselves the labor and responsibility of the management of the institution, as it was left to them by the gentlemen of the former Board, in whose years of zealous labors, devotion and experience in the work the Hospital had been established in its high reputation as a noble charity.

It was determined to combine the office of Admitting Physician with that of Superintendent, in order that for the convenience and benefit of those seeking admission, and for other desirable considerations, there might be a physician residing at the Hospital. Upon the recommendation of the Medical Staff, Dr. Edward Cowles was elected, and entered upon the duties of Superintendent on the 1st of July, and upon those of Admitting Physician, on the 1st of October, thereby relieving Dr. F. E. Bundy from the latter office, the title of which was afterwards changed to that of Resident Physician.

Mrs. Sarah A. Fletcher was elected Matron, to fill the office from the 1st of July, for the remainder of the year.

For the donations of books and other reading matter, and the personal labors of kind friends of the Hospital in the improvement of the library, and for other gifts and attentions to the sick from other sources, the cordial thanks of the Board are returned.

The Trustees desire to acknowledge their appreciation of the continued services of the clergymen and others, whose kind attentions to the sick in the Hospital add greatly to their comfort.

To the gentlemen of the Medical Staff, and to the Superintendent, the cordial thanks of the Board are due, for their earnest and successful labors in promoting the interests of the Hospital, and the welfare of the patients under their charge.

E. C. DREW, *President.*

REPORT OF THE SUPERINTENDENT AND RESIDENT PHYSICIAN.

City Hospital, April 30, 1873.

To the Board of Trustees: —

Gentlemen: — I have the honor to present herewith the Annual Report of the Hospital for the past year.

The following table shows the number of patients, who have, each year, applied for admission, and been treated at the Hospital.

	From June 1, 1864, to Dec. 31, 1864.	From Jan. 1, 1865, to Dec. 31, 1865.	From Jan. 1, 1866. to Dec. 31, 1866.	From Jan. 1, 1867, to Dec. 31, 1867.	From Jan. 1, 1868, to Dec. 30, 1868.	From Jan. 1, 1869, to April 30, 1870.	From May 1, 1870, to April 30, 1871.	From May 1, 1871, to April 30, 1872.	From May 1, 1872, to April 30, 1873.	Total.
Patients examined for admission	703	1,451	1,749	1,913	2,729	4,632	3,977	4,387	4,326	25,867
Patients admitted . . .	475	1,066	1,432	1,534	2,078	3,054	2,396	2,873	3,304	18,212
Patients accidentally injured	129	242	345	328	417	482	525	565	660	3,693
Number of out-patients treated	371	1,143	3,324	7,015	8,794	11,721	8,899	8,947	7,526	57,740

The number of patients who visited the hospital for advice and treatment in the out-patients' department, was as follows: —

Ophthalmic, under the charge of Drs. Williams and Wadsworth	1,519
Medical, under charge of Drs. Doe and Haskins .	2,602
Surgical, " " the Visiting Surgeons .	2,386
Skin diseases " " Dr. Damon . . .	809
Ear " " " Dr. Green . . .	210
Total	7,526

Number of visits made by out-patients to the Hospital.

Year.	Month.	Medical.	Surgical.	Oph.	Ear.	Skin.	Total.
1872.	May	432	648	1,135	190	287	2,692
	June	323	533	879	133	216	2,084
	July	341	530	767	113	246	1,997
	August	354	526	532	152	197	1,761
	September	247	513	516	114	155	1,545
	October	307	511	567	127	222	1,734
	November	187	374	663	48	336	1,608
	December	193	308	692	46	254	1,553
1873.	January	267	405	679	0	204	1,555
	February	270	526	572	0	240	1,608
	March	331	434	696	146	180	1,787
	April	345	452	903	228	226	2,154
		3,597	5,820	8,601	1,297	2,763	22,078

Patients Examined during the Year.

	1872–3.	Number Examined.	Number Admitted.	Number not Admitted.
1872.	May	407	322	85
	June	370	300	70
	July	432	351	81
	August	378	291	87
	September	305	246	59
	October	346	255	91
	November	289	202	87
	December	321	227	94
1873.	January	350	266	84
	February	355	265	90
	March	349	271	78
	April	424	308	116
		4,326	3.304	1,022

PATIENTS NOT ADMITTED AND CAUSE.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	Total.
For want of accommodation	18	3	5	6	2	4	3	10	12	11	15	27	116
Referred to out-patients' department	32	18	22	26	28	31	25	33	22	32	24	23	316
Non-resident	7	13	10	12	6	13	8	4	6	4	6	7	96
Under four years of age	.	1	.	2	.	3	1	.	.	2	1	2	12
Visited, but changed their mind	5	2	2	1	1	4	4	3	8	3	1	10	44
Absent from home when called upon	.	1	.	2	.	1	.	.	5	1	2	3	15
Chronic and incurable	15	23	21	15	9	13	14	9	13	15	12	21	180
Phthisis	.	.	5	3	.	5	2	3	2	1	2	4	27
Delirium Tremens	.	1	.	.	.	.	2	.	.	.	.	.	3
Venereal	2	3	8	9	6	4	8	11	6	11	9	7	84
Pregnant and parturition	.	1	.	3	2	2	.	2	3	2	1	2	18
Variola and Variola Modificata	.	.	1	1	1	8	11	9	2	.	.	.	33
Convalescent	1	1	3	1	1	.	.	3	.	5	3	2	20
Miscellaneous	5	3	4	6	3	3	9	7	5	3	2	8	58
	85	70	81	87	59	91	87	94	84	90	78	116	1022

STATISTICAL STATEMENT.

Applications for admission	4,326
Admitted of the above	3,304
Patients accidentally injured	660
Patients in the Hospital, May 1, 1872	223
Total number in Hospital during the year	3,527
Total number, including out-patients, treated during the year	11,035
Discharged, including deaths	3,293
Daily average number in Hospital	218
Largest number at any time in Hospital	264
Smallest number at any time in Hospital	172
Number treated in Small-pox department	229
Average time remaining in Hospital	days 22½

RECAPITULATION.

Medical patients admitted	1,667
Surgical " "	1,339
Ophthalmic	78
Small-pox	220
Total	3,304

Employment of Patients Admitted during the Year.

MALES.

Apothecaries	3
Agents	9
Book-keepers	11
Bookbinders	13
Blacksmiths	24
Barbers	11
Bar-keepers	9
Boiler-makers	6
Brass-finishers	2
Bakers	25
Butchers	5
Children	19
Cigar-makers	8
Carriage-makers	2
Carpenters	75
Clerks	41
Cabinet-makers	15
Coopers	7
Curriers	17
Carriage-drivers	27
Discharged soldiers	5
Engineers	10
Firemen	9
Farmers	18
Glass-workers	5
Gardeners	21
Grocers	18
Harness-makers	7
Hatters	11
Hostlers	26
Laborers	715
Lawyers	2
Machinists	40
Mechanics	51
Marble-workers	12
Mariners	65
Merchants	8
Musicians	7
Masons	35
Nurses	8
Painters	45
Carried forward	1,447
Brought forward	1,447
Plumbers	17
Peddlers	25
Printers	41
Physicians	1
Piano makers	5
Porters	33
Railroad employés	41
Roofers	11
Store boys	37
School boys	79
Stone-cutters	24
Shoemakers	43
Slaters	19
Stevedores	5
Students	7
Teamsters	71
Tailors	16
Traders	5
Upholsterers	19
Unknown	31
Waiters	69
Total	2,046

FEMALES.

Children	27
School girls	51
Cooks	54
Domestics	721
Housekeepers	203
Nurses	33
No occupation given	42
Shop girls	38
Seamstresses	49
Tailoresses	31
Teachers	9
Total	1,258

RECAPITULATION.

Males	2,046
Females	1,258
Total	3,304

Nativity of Patients Admitted during the Year.

Boston	422
Other towns in Mass.	172
Maine	139
New Hampshire	61
Vermont	27
Rhode Island	9
Connecticut	7
New York	65
Middle States	29
Southern States	55
Western States	25
British Provinces	365
England	180
Ireland	1,465
Scotland	72
Wales	7
Iceland	1
Norway	5
Sweden	27
Germany	62
Carried forward	3,195

Brought forward	3,195
Switzerland	5
Prussia	3
Russia	6
Poland	5
Liberia	3
Greece	1
Italy	7
Holland	3
Belgium	5
Denmark	2
Persia	1
France	17
Spain	6
South America	4
West Indies	11
Western Islands	14
East Indies	3
On the ocean	4
Unknown	9
Total	3,304

Ages of Patients Admitted during the Year.

MALES.	
Under 12 months	1
From 1 to 5	6
" 5 to 10	37
" 10 to 20	331
" 20 to 30	671
" 30 to 40	460
" 40 to 50	287
" 50 to 60	165
" 60 to 70	73
" 70 to 80	4
" 80 to 90	3
Unknown	9
Total	2,046

FEMALES.	
From 1 to 5	7
" 5 to 10	46
" 10 to 20	181
" 20 to 30	429
" 30 to 40	256
" 40 to 50	166
" 50 to 60	126
" 60 to 70	42
" 70 to 80	2
Unknown	3
Total	1,258

Civil Condition.

MALES.	
Married	829
Single	997
Widowers	220
Total	2,046

FEMALES.	
Married	186
Single	755
Widows	317
Total	1,258

CONDITION OF PATIENTS DISCHARGED.

Recovered	1,764
Relieved	899
Not relieved	151
Not treated	128
Died	351
Total	3,293

The rate of mortality during the year was $9\frac{9}{10}$ per cent. of the patients treated in all the departments of the Hospital. The excess of this rate over that of previous years was largely due to the fact that of the 229 patients in the small-pox department, 54 died, or $23\frac{6}{10}$ per cent. If these cases are excluded in this estimate, the rate of mortality will be reduced to 9 per cent. for the Hospital proper. There were admitted during the year 95 more patients accidentally injured, than in any former year; and 79 cases in all departments resulted in death within 48 hours after admission; showing an increased proportion of cases necessarily resulting fatally, and materially enlarging the rate of mortality over that of previous years in the history of the Hospital.

NUMBER OF PATIENTS TREATED EACH YEAR, AND RATE OF MORTALITY.

	No. of patients admitted.	Died.	Rate of mortality.
1864, 7 months, ending Dec. 31	475	47	.099
1865, year ending Dec. 31	1,167	97	.083
1866, “ “ “ “	1,549	123	.080
1867, “ “ “ “	1,697	146	.086
1868, “ “ “ “	2,219	163	.073
1870, 16 months, ending April 30	3,235	246	.076
1871, year ending April 30	2,569	215	.083
1872, “ “ “ “	3,054	247	.080
1873, “ “ “ “	3,527	351	.099

Disbursements from May 1, 1872, to April 30, 1873.

Articles.	Quantity.	Cost.	Average.
Beef	71,619 lbs.	$8,683 92	12½ c. per. lb.
Mutton	21,654 "	2,093 22	9⅔ " "
Lamb	873 "	93 84	10½ " "
Veal	771 "	73 28	9⅜ " "
Fowls	10,289 "	2,263 58	22 " "
Pork and Hams	1,890 "	217 73	11½ " "
Lard	683 "	74 39	10⅞ " "
Butter	10,312 "	2,623 12	25½ " "
Cheese	148 "	24 84	16⅞ " "
Eggs	4,081 doz.	1,084 03	26⅜ per doz.
Vegetables		1,723 09	
Bread		4,694 31	
Fish		1,270 14	
Milk	105,774 qts.	6,875 33	6½ per qt.
Flour	71 bbls.	694 38	$9 78 per bbl.
Water	9,878,033 gals.	2,963 41	3 c. per 100 gals.
Ice	252 88-100 tons.	1,011 50	$4 00 per ton.
Groceries		9,549 06	
Liquors, including Ale, Cider and Porter		3,189 58	
Medical Supplies		4,520 66	
Compress and Bandages		908 42	
Surgical Instruments, and Repairing		421 42	
SALARIES AND LABOR.			
Professional and other services in Small-pox department . . $2,356 00 do. in other departments . 25,450 22		27,806 22	
Board and attendance in Small-pox Department		4,934 85	
Coal	989 37-100 tons.	6,381 43	$6 45 per ton.
Wood and Charcoal		467 04	
Stable, Exchange of horses, hay, grain, etc., and repairs of vehicles and harnesses		2,115 00	
Carried forward		$96,757 79	

Disbursements, — *Continued.*

Articles.		Quantity.	Cost.	Average.
Brought forward			$96,757 79	
Gas			1,835 80	
Books, Printing and Stationery			1,477 02	
Buildings and Grounds, care and improvements, including watering streets			1,993 00	
Repairs			8,886 45	
Fixtures, including additional for tanks			1,436 84	
INCIDENTALS.				
Digging graves at Mount Hope Cemetery	$98 50			
Miscellaneous	137 81			
Collation, for Physicians and Surgeons, while examining candidates for House Officers, Feb., 1872	100 00			
do. Feb., 1873	90 00		426 31	
FURNISHING.				
Repairs and Renewals	$5,848 11			
Add'l new Furniture including Bigelow operating chair	1,008 67		6,856 78	
			$119,669 99	
Stock on hand, May 1, 1872.				
Supplies		$1,178 98		
Liquors		250 75		
Fuel		2,779 00		
Medical Supplies		972 50	5,181 23	
			$124,851 22	
DEDUCT.				
Stock on hand.				
Supplies	$2,475 89			
Liquors	625 00			
Medical Supplies	1,179 66	$4,280 57		
Cash received from pay-patients		3,948 64		
Add'l new Furniture and Fixtures		2,445 51	10,674 72	
Carried forward			$114,176 50	

Brought forward, Net cost of maintaining Hospital from May 1, 1872, to April 30, 1873, including Small Pox patients			$114,176 50
Deduct also, Expenditures for Small-pox Hospital.			
Professional and other services	$2,356 00		
Board and attendance	4,934 85		
Furnishing, etc., transferred to Board of Health	2,728 33		
Destroyed	200 75		
Total		$10,219 93	
Less cash received from pay-patients in Small-pox Hospital		1,399 16	8, 820 77
Net cost of maintaining Hospital, from May 1, 1872, to April 30, 1873			$105,355 73

It will be seen that the considerable increase in the amount of the expenditures for the year was due chiefly to the unusual expenses of the Small-pox hospital. In addition to this, the increased number of patients treated caused a material enlargement of the sum of the expenditures.

It will be evident, from the foregoing statements, that the business of the Hospital has been still further enlarged, during the past year, although it had previously reached the proper limit of the capacity of the wards, by a steady increase, each year, in the number of patients. Nearly 500 more patients have been treated in the wards than in any former year; but this has been possible only by constantly crowding with beds all the available space, and by shortening the length of stay of each patient in Hospital. Many applicants were turned away for want of room, and many others, whose cases demanded immediate care and treatment, as a matter of humanity, were admitted, at the risk of incurring the evils of overcrowding; some of which have, without doubt, been experienced during the latter part of the year. That this should have been so must be apparent, when it is considered how nearly the daily average number for the year, 218 patients, approaches to the proper capacity of the Hospital, which is 230 beds. But this number was much exceeded in some seasons of the year. During the months of winter and early spring, there was a period of many successive weeks, in which there were constantly about 250 patients in the wards, and at one time 264 were under treatment, the largest number ever attained in the wards of the Hospital proper, exclusive of the Small-pox department.

The want of sufficient accommodations for all the sick, who, under the present rules for admission, must be treated here, has existed for several years, and hardly needs to be set forth in stronger terms than has already been done. In the experience of the Hospital during

view, however, of the past year, attention must be called to the fact, that the enlargement of its capacity cannot be long delayed, or it will be impossible to care for, in a satisfactory manner, the increasing numbers of persons who are equally deserving with those now receiving its benefits, and who demand admission to its wards.

In the surgical department the need is more seriously felt than ever of properly arranged and larger rooms for out-patients, and of a more commodious and convenient operating room, with waiting and reception rooms adjoining, so that those who have undergone surgical operations may be removed, as they cannot now be, from the sight and hearing of others who are waiting and fearing to go through the same ordeal.

A number of valuable books have been presented during the year to the Medical Library, for which much can be done to make it creditable and useful to the Hospital.

Thanks are due for the packages of magazines and papers that were frequently received during the year; to the ladies and their friends, who have kindly, and with much labor, prepared a new catalogue of the general library, and to the ladies of the Flower Mission, whose regular weekly visits have given much pleasure to the patients.

The clergymen and others who have contributed to the comfort and consolation of the sick, by their frequent visits and many attentions, are remembered with grateful appreciation for their kind labors for the Hospital.

Trusting that the confidence that has been placed in me by the Trustees may prove to be well deserved, and with grateful acknowledgments to them for their generous support, and to the gentlemen of the Medical Staff for the very essential aid they have given me in my undertaking,

I have the honor to be, gentlemen,

Very respectfully,

EDWARD COWLES,

Superintendent and Resident Physician.

Erratum.

In first line, page 24, after the words "however of", insert the words " the experience of the Hospital during."

REPORT OF HOSPITAL STAFF.

TABLE OF MEDICAL DISEASES,

Classified according to the Nomenclature of Diseases, as published by the Royal College of Physicians of London, and American Medical Association.

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
GENERAL DISEASES.											
A.											
1. Small-pox	. .	7	2	9	. .	. .	. .	9	. .	9	. . .
Varioloid	. .	2	1	3	. .	. .	. .	3	. .	3	. . .
4. Measles	. .	3	13	16	16	. .	. .	. .	. .	16	. . .
5. Scarlet Fever	. .	5	12	17	14	2	. .	. .	1	17	. . .
Anginose	. .	2	. .	2	. .	2	. .	. .	. .	2	. . .
9. Typhoid Fever	4	93	64	157	118	4	1	. .	34	157	4
10. Relapsing Fever	. .	1	1	2	. .	. .	. .	. .	2	2	. . .
11. Simple Continued Fever	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
12. Febricula	. .	25	24	49	39	5	. .	2	. .	46	3
15. Intermittent Fever	2	34	6	40	32	7	. .	. .	. .	39	3
Irregular	1	2	. .	2	2	. .	. .	. .	. .	2	1
20. Hooping Cough	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
21. Mumps	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
22. Influenza	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
25. Erysipelas	5	15	25	40	28	4	1	1	5	39	6
B.											
34. Acute Rheumatism	15	79	58	137	110	17	3	1	3	134	18
35. Gonorrhœal Rheumatism . . .	. .	3	. .	3	2	1	. .	. .	. .	3	. . .
36. Synovial Rheumatism	. .	2	3	5	2	3	. .	. .	. .	5	. . .
37. Muscular Rheumatism	. .	5	7	12	10	1	1	. .	. .	12	. . .
38. Chronic Rheumatism	11	54	15	69	47	16	3	1	. .	67	13
40. Chronic Gout	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
43. Syphilis	. .	5	1	6	. .	3	. .	3	. .	6	. . .
Carried forward . . .	38	346	232	578	428	66	9	20	45	568	48

Medical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital, April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	38	346	232	578	428	66	9	20	45	568	48
GENERAL DISEASES. — *Con.*											
Secondary	7	12	25	37	13	21	1	5	. .	40	4
Hereditary	. .	1	1	2	. .	1	. .	1	. .	2	. . .
Cancer	. .	2	. .	2	. .	. .	. .	. .	2	2	. . .
Cancer of Stomach	. .	5	. .	5	. .	. .	1	. .	4	5	. . .
Cancer of Uterus	. .	. .	9	9	. .	6	. .	2	1	9	. . .
Phthisis Pulmonalis	12	108	46	154	. .	117	6	. .	28	151	15
Hæmoptysis	1	1	. .	1	. .	1	. .	. .	. .	1	1
Acute Miliary Tuberculosis . .	. .	2	. .	2	. .	. .	. .	. .	2	2	. . .
52. Diabetes	. .	5	. .	5	. .	5	. .	. .	. .	5	. . .
55. Anæmia	. .	1	11	12	10	2	. .	. .	. .	12	. . .
57. Debility	5	20	66	86	50	24	6	5	. .	85	6
DISEASES OF THE NERVOUS SYSTEM.											
60. Meningitis	. .	9	2	11	. .	. .	. .	. .	11	11	. . .
61. Inflammation of the brain . . .	. .	3	2	5	. .	2	. .	. .	3	5	. . .
65. Apoplexy	. .	2	2	4	. .	2	. .	. .	2	4	. . .
Cerebro-spinal Meningitis . . .	. .	5	4	9	2	. .	. .	. .	7	9	. . .
Softening of the Brain	. .	. .	1	1	. .	. .	1	. .	. .	1	. . .
66. Sunstroke and effects of	. .	9	2	11	7	2	. .	. .	2	11	. . .
DISEASES OF SPINAL CORD AND MEMBRANES.											
75. Spinal Meningitis	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
Myelitis	. .	1	. .	1	. .	. .	1	. .	. .	1	. . .
DISEASES OF THE NERVES.											
84. Paralysis	2	6	7	13	5	5	1	. .	2	13	2
Hemiplegia	3	5	1	6	. .	3	2	. .	1	6	3
Paraplegia	. .	9	. .	9	. .	1	1	. .	4	6	3
Carried forward . . .	68	553	411	964	515	258	29	33	115	950	82

Medical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	68	553	411	964	515	258	29	33	115	950	82
FUNCTIONAL DISEASES OF NERVOUS SYSTEM.											
93. Epilepsy	. .	8	2	10	4	4	2	. .	. .	10	. . .
94. Convulsions	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
98. Chorea	1	. .	. .	. .	. .	1	. .	. .	. .	1	. . .
99. Hysteria	. .	. .	15	15	10	5	. .	. .	. .	15	. . .
101. Neuralgia (General)	1	8	15	23	17	3	1	. .	. .	21	3
Facial. Tic Douloureux . .	. .	1	2	3	1	2	. .	. .	. .	3	. . .
Hemicrania	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Sciatica	. .	6	4	10	6	1	1	1	. .	9	1
Pleurodynia	. .	2	2	4	2	1	1	. .	. .	4	. . .
104. Hypochondriasis	. .	7	. .	7	3	3	1	. .	. .	7	. . .
DISEASES OF INTELLECT.											
105. Mania	. .	3	12	15	. .	3	8	4	. .	15	. . .
106. Melancholia	. .	. .	3	3	. .	2	1	. .	. .	3	. . .
107. Dementia	. .	3	1	4	. .	1	1	2	. .	4	. . .
DISEASES OF THE EAR.											
Inflammation of the Internal Ear	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF THE EYE.											
Ulceration of Cornea	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
DISEASES OF THE CIRCULATORY SYSTEM.											
DISEASES OF THE HEART AND ITS MEMBRANES.											
219. Pericarditis	. .	2	1	3	. .	1	. .	. .	2	3	. . .
222. Dropsy	. .	2	. .	2	. .	. .	. .	. .	. .	. .	2
224. Endocarditis	. .	3	. .	3	. .	3	. .	. .	. .	3	. . .
225. Valve Disease	1	6	3	9	. .	3	. .	. .	5	8	2
Aortic	. .	4	3	7	. .	6	. .	. .	1	7	. . .
Carried forward . . .	71	611	475	1086	561	298	45	40	123	1067	90

Medical Diseases. — *Continued.*

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1773.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	71	611	475	1086	561	298	45	40	123	1067	90
DISEASES OF THE HEART AND ITS MEMBRANES. — *Con.*											
Mitral	1	8	2	10	. .	7	. .	. .	3	10	1
236. Aneurism	. .	2	. .	2	. .	. .	. .	. .	2	2	. . .
DISEASES OF THE ARTERIES.											
248. Occlusion	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
250. Aneurism	. .	3	. .	3	. .	. .	. .	. .	3	3	. . .
DISEASES OF THE VEINS.											
261. Varix	. .	3	. .	3	. .	1	. .	2	. .	3	. . .
DISEASES OF THE SUPRA-RENAL CAPSULES.											
286. Addison's Disease	. .	1	1	2	1	. .	. .	. .	1	2	. . .
DISEASES OF LARYNX.											
293. Laryngitis	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF TRACHEA AND BRONCHI.											
305. Bronchial Catarrh	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
306. Bronchitis	. .	20	15	35	23	9	. .	. .	3	35	. . .
Acute	1	4	. .	4	3	1	. .	. .	1	5	. . .
Chronic	2	5	4	9	. .	11	. .	. .	. .	11	. . .
314. Asthma	1	7	2	9	2	6	. .	1	1	10	. . .
DISEASES OF THE LUNG.											
315. Pneumonia	7	40	9	49	37	13	1	. .	3	54	2
316. Abscess	. .	5	. .	5	3	. .	. .	. .	2	5	. . .
317. Gangrene	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
318. Passive Congestion	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
319. Pulmonary Apoplexy	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
DISEASES OF THE PLEURA.											
331. Pleurisy	1	18	5	23	11	9	. .	. .	2	22	2
332. Chronic Pleurisy	1	1	. .	1	. .	. .	. .	. .	1	1	1
333. Empyema	. .	2	2	4	. .	2	. .	. .	2	4	. . .
Carried forward . . .	85	736	515	1251	644	358	46	43	149	1240	96

Medical Diseases. — *Continued.*

DISEASES.	In Hospital, May 1, 1872.	ADMITTED. Males.	ADMITTED. Females.	ADMITTED. Total.	DISCHARGED. Well.	DISCHARGED. Relieved.	DISCHARGED. Not Relieved.	DISCHARGED. Not Treated.	DISCHARGED. Died.	DISCHARGED. Total.	Remaining in Hospital April 30, 1873.
Brought forward . . .	85	736	515	1251	644	358	46	43	149	1240	96
DISEASES OF THE PLEURA. — *Con.*											
335. Hydrothorax	. .	5	. .	5	2	1	. .	. .	1	4	1
336. Pneumothorax	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF THE DIGESTIVE SYSTEM.											
348. Stomatitis	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
DISEASES OF THE TONGUE.											
412. Glossitis	. .	2	. .	2	. .	1	1	. .	. .	2	. . .
DISEASES OF THE FAUCES AND PALATE.											
423. Tonsillitis	3	8	4	12	10	. .	. .	. .	1	11	4
DISEASES OF THE STOMACH.											
449. Gastritis	2	4	6	10	5	2	2	. .	1	10	2
450. Chronic Ulcer	. .	. .	5	5	. .	5	. .	. .	. .	5	. . .
460. Dyspepsia	1	11	37	48	30	16	2	. .	. .	48	1
DISEASES OF THE INTESTINES.											
466. Dysentery	. .	8	7	15	10	2	. .	. .	3	15	. . .
484. Diarrhœa	1	21	14	35	28	7	. .	. .	1	36	. . .
487. Constipation	. .	3	. .	3	2	1	. .	. .	. .	3	. . .
DISEASES OF THE LIVER.											
501. Hepatitis	1	. .	5	5	1	2	1	. .	1	5	1
503. Acute Atrophy	. .	2	. .	2	. .	. .	. .	. .	2	2	. . .
506. Cirrhosis	2	5	3	8	. .	3	. .	1	5	9	1
509. Lardaceous Liver	. .	3	2	5	. .	1	2	. .	2	5	. . .
513. Jaundice	. .	6	3	9	4	2	. .	. .	3	9	. . .
520. Gall Stones	. .	2	. .	2	. .	2	. .	. .	. .	2	. . .
DISEASES OF THE SPLEEN.											
526. Congestion (Ague Cake) . .	1	. .	. .	. .	. .	1	. .	. .	. .	1	. . .
DISEASES OF PERITONEUM.											
531. Peritonitis	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
532. Ascites	. .	3	1	4	. .	. .	3	. .	1	4	. . .
Carried forward . . .	96	820	604	1424	737	405	57	44	171	1414	106

Medical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	96	820	604	1424	739	405	57	44	171	1414	106
DISEASES OF URINARY SYSTEM.											
DISEASES OF KIDNEY.											
538. Bright's Kidney	. .	21	13	34	22	. .	. .	. .	11	33	1
Acute	3	7	. .	7	3	6	. .	. .	1	10	. . .
Chronic	6	13	4	17	. .	17	5	. .	1	23	. . .
539. Suppurative Nephritis	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
540. Abscess	. .	1	1	2	. .	2	. .	. .	. .	2	. . .
553. Hæmaturia Penalis	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
555. Diuresis	. .	1	. .	1	. .	. .	1	. .	. .	1	. . .
556. Movable Kidney	. .	1	. .	1	. .	. .	1	. .	. .	1	. . .
DISEASES OF THE BLADDER.											
557. Cystitis	. .	4	1	5	3	1	. .	1	. .	5	. . .
Chronic	1	. .	. .	. .	. .	1	. .	. .	. .	1	. . .
572. Paralysis	. .	6	1	7	3	. .	3	. .	1	7	. . .
575. Neuralgia	. .	. .	3	3	3	. .	. .	. .	. .	3	. . .
576. Incontinence of Urine	. .	6	. .	6	. .	. .	2	4	. .	6	. . .
Gonorrhœa	. .	2	2	4	1	. .	. .	3	. .	4	. . .
Spermatorrhœa	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF WOMEN, OF THE OVARY.											
630. Inflammation	. .	. .	1	1	. .	. .	1	. .	. .	1	. . .
635. Fibrous Tumor	. .	. .	1	1	. .	. .	1	. .	. .	1	. . .
636. Encysted Dropsy	. .	. .	1	1	. .	. .	. .	. .	. .	. .	1
637. Complex Cystic Tumor	. .	. .	2	2	. .	. .	. .	. .	2	2	. . .
DISEASES OF BROAD LIGAMENT.											
650. Pelvic Peritonitis	. .	. .	2	2	1	. .	. .	. .	. .	1	1
Pelvic Cellulitis	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
DISEASES OF THE WOMB.											
654. Catarrh (Leucorrhœa)	. .	. .	13	13	5	6	. .	1	. .	12	1
655. Inflammation	. .	. .	4	4	2	. .	. .	. .	. .	2	2
Carried forward . . .	106	884	655	1539	781	439	71	53	189	1533	112

Medical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	106	884	655	1539	781	439	71	53	189	1533	112
DISEASES OF THE WOMB—*Con.*											
656. Granular Inflammation . . .	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
658. Ulcer	1	. .	2	2	2	. .	. .	. .	. .	2	1
667. Fibrous Tumors	. .	. .	2	2	. .	. .	. .	. .	2	2	. . .
Polypus	1	. .	1	1	2	. .	. .	. .	. .	2	. . .
669. Anteversion	2	. .	. .	. .	2	. .	. .	. .	. .	2	. . .
Retroversion	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
Anteflexion	. .	. .	2	2	2	. .	. .	. .	. .	2	. . .
Retroflexion	. .	. .	1	1	. .	. .	. .	. .	. .	. .	1
Prolapsus	1	. .	6	6	2	3	2	. .	. .	7	. . .
671. Inflammation of Vagina . . .	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
681. Pruritus	. .	. .	1	1	. .	. .	. .	1	. .	1	. . .
FUNCTIONAL DISEASES OF WOMEN.											
690. Amenorrhœa	. .	. .	3	3	1	2	. .	. .	. .	3	. . .
694. Menorrhagia	. .	. .	3	3	2	. .	1	. .	. .	3	. . .
DISEASES OF PREGNANCY.											
695. Metritis	. .	. .	8	8	4	. .	. .	2	. .	6	2
703. Abortion	. .	. .	6	6	3	3	. .	. .	. .	6	. . .
Vomiting	. .	. .	3	3	. .	3	. .	. .	. .	3	. . .
DISEASES OF CUTANEOUS SYSTEM.											
827. Erythema	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
829. Roseola	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
834. Prurigo	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
835. Eczema	. .	13	6	19	10	8	1	. .	. .	19	. . .
838. Psoriasis	. .	3	2	5	1	4	. .	. .	. .	5	. . .
894. Scabies	. .	2	1	3	2	1	. .	. .	. .	3	. . .
POISONS.											
METALS AND THEIR SALTS.											
906. Arsenic	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Carried forward . . .	111	904	707	1611	816	468	75	56	191	1606	116

Medical Diseases.—Concluded.

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital, April 1, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	111	904	707	1611	816	468	75	56	191	1606	116
POISONS. — *Con.*											
908. Lead	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Colic	. .	3	. .	3	3	. .	. .	. .	. .	3	. . .
ACIDS.											
926. Oxalic Acid	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
Prussic Acid	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
VEGETABLE POISONS.											
936. Opium	. .	1	1	2	. .	. .	. .	1	1	2	. . .
938. Alcohol	1	28	12	40	33	2	. .	1	3	39	2
953. Nux Vomica	. .	3	. .	3	3	. .	. .	. .	. .	3	. . .
Strychnia	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
Oil of Cedar	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
Masturbation	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
Malingering	. .	2	. .	2	1	. .	. .	1	. .	2	. . .
Totals	112	943	724	1667	859	471	75	59	197	1661	118

SURGICAL DISEASES.

Classified according to the nomenclature adopted by the Royal College of Physicians of London, and by the American Medical Association.

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital, April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
GENERAL DISEASES.											
A.											
30. Erysipelas	1	5	3	8	4	1	. .	. .	2	7	2
Simple	. .	6	7	13	5	5	. .	. .	. .	10	3
Phlegmonous	1	5	3	8	6	2	. .	. .	. .	8	1
Diffuse inflammation of Cellular Tissue	3	24	13	37	20	7	. .	. .	3	30	10
B.											
Syphilis.											
Secondary	. .	6	3	9	. .	6	1	. .	. .	7	2
Tertiary	6	9	14	23	. .	20	3	. .	1	24	5
Soft Chancre	. .	3	2	5	4	1	. .	. .	. .	5	. . .
Bubo (hard or suppurating)	. .	2	2	4	. .	. .	. .	. .	. .	. .	4
Hereditary Syphilis	1	2	. .	2	. .	2	1	. .	. .	3	. . .
Phagedenic Chancroid	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Scirrhus	. .	2	1	3	. .	2	1	. .	. .	3	. . .
Medullary	. .	2	2	4	. .	3	1	. .	. .	4	. . .
Epithelial	. .	10	3	13	5	3	. .	. .	3	11	2
FUNCTIONAL DISEASES OF THE NERVOUS SYSTEM.											
101. Neuralgia	1	4	. .	4	1	1	. .	1	. .	3	2
Irritable Stump	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF THE NOSE.											
213. Epistaxis	. .	1	2	3	2	. .	. .	. .	1	3	. . .
DISEASES OF THE VEINS.											
260. Phlebitis	. .	4	. .	4	. .	2	1	. .	. .	3	1
261. Phlegmasia Dolens	. .	1	1	2	1	1	. .	. .	. .	2	. . .
266. Varicose Veins	1	1	1	2	. .	1	1	. .	. .	2	1
Carried forward	14	89	58	147	50	58	9	1	10	128	33

Surgical Diseases.— Continued.

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	14	89	58	147	50	58	9	1	10	128	33
DISEASES OF THE ABSORBENTS.											
271. Inflammation of Glands . . .	. .	3	1	4	. .	1	1	. .	. .	2	2
272. Suppuration of Glands	. .	6	4	10	3	4	. .	. .	. .	7	3
273. Hypertrophy of Glands . . .	1	. .	3	3	1	3	. .	. .	. .	4	. . .
Chronic Enlargement . . .	. .	4	2	6	4	2	. .	. .	. .	6	. . .
DISEASES OF DUCTLESS GLANDS.											
280. Bronchocele	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
DISEASES OF THE JAWS.											
360. Myeloid Tumor	. .	2	1	3	1	1	. .	. .	. .	2	1
Abscess Alveolar	. .	2	1	3	1	1	1	. .	. .	3	. . .
364. Cysts	. .	. .	3	3	2	. .	. .	. .	. .	2	1
DISEASES OF THE GUMS.											
385. Non-malignant Tumors	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
DISEASES OF THE FAUCES.											
423. Tonsillitis	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
425. Enlarged Tonsils	. .	1	1	2	2	. .	. .	. .	. .	2	. . .
430. Cleft Palate	. .	1	2	3	2	1	. .	. .	. .	3	. . .
DISEASES OF THE INTESTINES.											
479. Internal Strangulation	. .	1	. .	1	. .	. .	. .	. .	. .	. .	1
480. Hernia	. .	2	. .	2	. .	2	. .	. .	. .	2	. . .
Reducible	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Oblique	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Incomplete	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Femoral	. .	2	. .	2	1	. .	. .	. .	. .	1	1
DISEASES OF THE RECTUM.											
490. Fistula in Ano	. .	21	3	24	18	4	. .	. .	. .	22	2
491. Hæmorrhoids	. .	10	4	14	8	4	. .	. .	. .	12	2
Internal	1	2	3	5	3	3	. .	. .	. .	6	. . .
Carried forward . . .	16	152	87	239	101	85	11	1	11	209	46

Surgical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	16	152	87	239	101	85	11	1	11	209	46
DISEASES OF THE RECTUM.—*Con.*											
493. Fissure of the Anus	. .	1	1	2	1	1	. .	. .	. .	2	. . .
495. Stricture	. .	3	2	5	1	. .	. .	. .	2	3	2
496. Condyloma	. .	1	. .	1	. .	. .	. .	. .	. .	. .	1
DISEASES OF THE BLADDER.											
557. Cystitis	. .	9	4	13	4	6	2	. .	. .	12	1
Triple Phosphate	. .	1	. .	1	. .	. .	. .	1	. .	1	. . .
Vesico-vaginal Fistula	. .	. .	4	4	1	1	. .	1	. .	3	1
Incontinence of Urine	. .	2	. .	2	. .	2	. .	. .	. .	2	. . .
577. Retention of Urine	. .	3	. .	3	. .	. .	. .	. .	2	2	1
DISEASES OF THE PROSTATE GLAND.											
578. Inflammation	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Acute	. .	4	. .	4	2	1	. .	1	. .	4	. . .
Chronic	. .	3	. .	3	. .	1	. .	2	. .	3	. . .
GONORRHŒA.											
585. Gonorrhœa	. .	4	4	8	4	2	. .	2	. .	8	. . .
587. Phimosis	. .	4	. .	4	3	1	. .	. .	. .	4	. . .
589. Bubo	. .	5	2	7	5	2	. .	. .	. .	7	. . .
591. Epididymitis	1	3	. .	3	3	1	. .	. .	. .	4	. . .
DISEASES OF THE MALE URETHRA.											
596. Stricture	. .	3	. .	3	. .	1	. .	. .	2	3	. . .
Organic	1	4	. .	4	. .	3	1	1	. .	5	. . .
DISEASES OF THE SCROTUM.											
Abscess of Scrotum	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
DISEASES OF THE CORD.											
612. Hydrocele	. .	8	. .	8	5	1	. .	. .	1	7	1
613. Varicocele	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Carried forward . . .	18	216	104	320	133	111	14	9	18	285	53

Surgical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital, April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	18	216	104	320	133	111	14	9	18	285	53
DISEASES OF THE TUNICA VAGINALIS.											
618. Hæmatocele	1	1	. .	1	. .	1	. .	. .	. .	1	1
DISEASES OF THE TESTICLE.											
620. Orchitis	. .	10	. .	10	6	3	. .	. .	. .	9	1
Acute	. .	4	. .	4	3	1	. .	. .	. .	4	. . .
Chronic	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
Hydrosarcocele	. .	3	. .	3	. .	3	. .	. .	. .	3	. . .
DISEASES OF FEMALE ORGANS OF GENERATION.											
634. Cancer	. .	. .	3	3	. .	1	1	1	. .	3	. . .
635. Fibrous Tumor	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
636. Encysted Dropsy	. .	. .	2	2	. .	. .	. .	. .	1	1	1
DISEASES OF THE VULVA.											
683. Abscess	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
Condyloma	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
Hypertrophy of Nymphæ . .	. .	. .	2	2	1	1	. .	. .	. .	2	. . .
DISORDERS OF THE CIRCULATORY SYSTEM.											
Of the Lower Extremities . .	. .	2	1	3	. .	2	. .	1	. .	3	. . .
DISEASES OF THE FEMALE BREAST.											
729. Inflammation	. .	. .	3	3	2	1	. .	. .	. .	3	. . .
Chronic	. .	. .	1	1	. .	1	. .	. .	. .	1	. . .
730. Abscess	. .	. .	3	3	1	2	. .	. .	. .	3	. . .
Cancer	. .	. .	6	6	3	1	1	1	. .	6	. . .
DISEASES OF BONES.											
755. Ostitis	. .	2	1	3	2	1	. .	. .	. .	3	. . .
Periostitis	. .	3	1	4	. .	2	1	. .	. .	3	1
Exostosis	1	2	. .	2	. .	1	. .	1	1	3	. . .
Carried forward . . .	20	244	130	374	153	133	17	13	21	337	57

Surgical Diseases.— Continued.

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	20	244	130	374	153	133	17	13	21	337	57
DISEASES OF BONES. — *Con.*											
759. Caries	1	12	5	17	. .	5	6	3	2	16	2
760. Necrosis	3	19	6	25	. .	10	9	8	. .	27	1
Cancer	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
DISEASES OF JOINTS.											
769. Synovitis											
Acute	. .	10	8	18	9	6	2	1	. .	18	. . .
Chronic	. .	8	10	18	6	10	2	. .	. .	18	. . .
Pulpy Degeneration	. .	2	3	5	3	2	. .	. .	. .	5	. . .
Scrofulous Disease	. .	3	4	7	. .	4	2	. .	1	7	. . .
Morbus Coxæ	3	5	3	8	. .	6	2	3	. .	11	. . .
771. Abscess	. .	4	1	5	3	2	. .	. .	. .	5	. . .
772. Ankylosis	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
776. Loose Cartilage	. .	2	1	3	2	1	. .	. .	. .	3	. . .
DISEASES OF THE SPINE.											
784. Caries and Necrosis	. .	2	3	5	. .	3	. .	. .	. .	3	2
785. Psoas and Lumber Abscess .	. .	. .	2	2	. .	1	. .	. .	. .	1	1
786. Angular Curvature	1	2	. .	2	. .	2	. .	. .	. .	2	1
DISEASE OF TENDONS.											
804. Thecal Abscess	. .	4	5	9	5	3	. .	1	. .	9	. . .
DISEASES OF THE APPENDAGES OF THE MUSCULAR SYSTEM.											
812. Enlarged Bursa Patellæ . . .	. .	. .	2	2	2	. .	. .	. .	. .	2	. . .
813. Enlargement of other Bursæ .	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
816. Bunion	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
817. Ganglion	. .	2	1	3	. .	2	. .	1	. .	3	. . .
DISEASES OF THE CELLULAR TISSUE.											
821. Sphacelus	. .	6	. .	6	3	1	. .	. .	2	6	. . .
Phlegmonous Erysipelas . . .	1	7	6	13	9	5	. .	. .	. .	14	. . .
862. Carbuncle	. .	4	2	6	5	1	. .	. .	. .	6	. . .
Carried forward . . .	29	339	193	532	202	199	40	30	26	497	64

Surgical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	29	339	193	532	202	199	40	30	26	497	64
INJURIES.											
992. Burns	2	24	9	33	19	8	. .	4	4	35	. . .
994. Multiple Injuries	3	39	4	43	22	5	. .	. .	16	43	3
997. Exposure to Cold	2	12	2	14	13	2	. .	. .	. .	15	1
LOCAL INJURIES.											
A. Of the Head	. .	6	2	8	4	1	. .	. .	2	7	1
1000. Contusion	. .	5	2	7	4	3	. .	. .	. .	7	. . .
1001. Scalp-wound; bone not exposed	. .	16	8	24	12	8	. .	4	. .	24	. . .
1002. Scalp-wound; bone exposed .	2	12	5	17	9	7	. .	. .	2	18	1
1003. Concussion of the Brain . . .	1	9	3	12	6	3	3	. .	. .	12	1
1004. Fracture of the Vault of the Skull	. .	4	1	5	. .	2	1	. .	2	5	. . .
Fracture Simple, without depression	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Fracture Simple, with depression	. .	3	. .	3	1	1	. .	. .	1	3	. . .
Compound, without depression	. .	2	. .	2	. .	1	1	. .	. .	2	. . .
Compound, with depression	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
1006. Fracture of the base of the Skull	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
INJURIES OF THE FACE.											
1011. Contusion	. .	7	3	10	6	3	. .	. .	. .	9	1
1012. Wound	. .	6	3	9	5	3	. .	1	. .	9	. . .
1014. Foreign bodies in the Ear . .	. .	2	1	3	2	1	. .	. .	. .	3	. . .
1018. Fracture of facial bones . . .	. .	3	. .	3	1	1	. .	1	. .	3	. . .
1019. Fracture of lower Jaw . . .	. .	8	. .	8	5	2	. .	. .	. .	7	1
INJURIES OF THE NECK.											
1037. Contusion of soft parts . . .	. .	6	4	10	5	3	. .	. .	2	10	. . .
1042. Wound, cut throat	1	5	2	7	4	2	. .	. .	1	7	1
Carried forward . . .	40	512	242	754	321	256	45	40	58	720	74

Surgical Diseases. — *Continued.*

DISEASES.	In Hospital May 1, 1872.	ADMITTED. Males.	ADMITTED. Females.	ADMITTED. Total.	DISCHARGED. Well.	DISCHARGED. Relieved.	DISCHARGED. Not Relieved.	DISCHARGED. Not Treated.	DISCHARGED. Died.	DISCHARGED. Total.	Remaining in Hospital April 30, 1873.
Brought forward . . .	40	512	242	754	321	256	45	40	58	720	74
INJURIES OF THE CHEST.											
1048. Contusion	. .	6	4	10	6	2	. .	2	. .	10	. . .
1049. Fracture of Ribs	. .	18	6	24	12	6	5	. .	. .	23	1
1050. Fracture of Ribs with injury of Lung	. .	2	. .	2	. .	1	. .	. .	. .	1	1
1052. Wound of the Parietes . . .	. .	4	. .	4	2	1	1	. .	. .	4	. . .
INJURIES OF THE BACK.											
1059. Contusion	. .	10	4	14	9	2	. .	3	. .	14	. . .
1060. Sprain	. .	5	3	8	3	3	1	. .	1	8	. . .
1061. Wound	. .	3	. .	3	1	1	. .	. .	1	3	. . .
1062. Fracture and Dislocation of Spine	. .	5	1	6	. .	1	1	. .	3	5	1
1063. Injury of the Cord, without Fracture	. .	3	2	5	1	2	. .	. .	2	5	. . .
INJURIES OF THE ABDOMEN.											
1064. Contusion	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
1067. Wound of the Parietes . . .	. .	4	. .	4	. .	2	1	. .	1	4	. . .
1068. Wound of the Parietes, with Protrusion of Viscera . .	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
INJURIES OF THE PELVIS.											
1077. Contusion	. .	5	. .	5	4	1	. .	. .	. .	5	. . .
1078. Wound of Male Perineum . .	. .	5	. .	5	3	1	. .	. .	. .	4	1
1079. " " Female " . .	. .	. .	3	3	3	. .	. .	. .	. .	3	. . .
1084. Rupture of Bladder	. .	1	. .	1	. .	. .	1	. .	. .	1	. . .
1085. Rupture of Bladder from fracture	. .	1	. .	1	. .	. .	. .	. .	1	1	. . .
INJURIES OF THE UPPER EXTREMITIES.											
1092. Contusion	. .	12	4	16	9	5	. .	2	. .	16	. . .
1093. Sprain	. .	5	2	7	5	2	. .	. .	. .	7	. . .
1094. Wound	. .	20	5	25	15	6	. .	2	1	24	1
Carried forward . . .	40	624	276	900	395	293	55	49	69	861	79

Surgical Diseases. — *Continued.*

DISEASES.	In Hospital, May 1, 1872.	ADMITTED. Males.	ADMITTED. Females.	ADMITTED. Total.	DISCHARGED. Well.	DISCHARGED. Relieved.	DISCHARGED. Not Relieved.	DISCHARGED. Not Treated.	DISCHARGED. Died.	DISCHARGED. Total.	Remaining in Hospital April 30, 1773.
Brought forward . . .	40	624	276	900	395	293	55	49	69	861	79
INJURIES OF THE UPPER EXTREMITIES. — *Con.*											
1096. Injury to Vessels	. .	1	. .	1	. . .	. .	. .	. .	1	1	. . .
1098. Separation of Epiphyses . .	. .	2	1	3	. .	2	1	. .	. .	3	. . .
1101. Fracture of the Clavicle . . .	. .	12	3	15	9	4	. .	. .	. .	13	2
1102. " " Scapula . .	. .	2	. .	2	1	. .	. .	. .	. .	1	1
1103. " " Humerus . .	. .	22	8	30	19	6	. .	. .	. .	25	5
1104. " " Forearm . .	1	27	11	38	28	4	. .	. .	1	33	6
1105. Fracture of the Carpus, Metacarpus or Phalanges . . .	1	17	7	24	16	5	. .	2	. .	23	2
Compound Fracture of Humerus and Forearm	. .	3	. .	3	2	1	. .	. .	. .	3	. . .
Compound Fracture of Radius	. .	3	. .	3	2	1	. .	. .	. .	3	. . .
Fracture of Olecranon . . .	. .	2	1	3	1	1	. .	. .	. .	2	1
1108. Dislocation of the Sterno-clavicular Joint	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
1110. Dislocation of the Shoulder .	. .	11	4	15	12	3	. .	. .	. .	15	. . .
1111. Dislocation of the Elbow . .	. .	6	4	10	6	4	. .	. .	. .	10	. . .
INJURIES OF THE LOWER EXTREMITIES.											
1115. Contusion	2	22	12	34	17	10	. .	8	1	36	. . .
1116. Sprain	. .	32	11	43	25	15	. .	3	. .	43	. . .
1117. Wound	3	7	. .	7	5	2	2	. .	1	10	. . .
1122. Fracture of the Femur . . .	7	20	8	28	26	1	. .	. .	4	31	4
1123. Fracture of the Cervix Femoris	5	12	4	16	13	5	. .	. .	3	21	. . .
1126. Fracture of the Patella . . .	. .	6	1	7	2	4	. .	. .	1	7	. . .
1127. Fracture of the Leg, both Bones	4	13	6	19	5	5	. .	. .	10	20	3
1128. Fracture of the Tibia, alone .	4	12	8	20	11	7	. .	. .	2	20	4
1129. Fracture of the Fibula, alone	6	9	7	16	9	9	. .	. .	1	19	3
Carried forward . . .	73	867	372	1239	606	382	58	62	94	1202	110

Surgical Diseases.—Continued.

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	73	867	372	1239	606	382	58	62	94	1202	110
INJURIES OF THE LOWER EXTREMITIES.—*Con.*											
1130. Fracture of the Bones of the Foot	. .	1	3	4	1	2	. .	. .	1	4	. . .
1137. Dislocation of the Foot at the Ankle	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
1142. Dislocation of the Metatarsus and Phalanges	. .	1	. .	1	. .	. .	. .	. .	. .	. .	1
INJURIES NOT CLASSIFIED.											
Rupture of Internal Lateral Ligament of Knee . . .	. .	1	. .	1	1	. .	. .	. .	. .	1	. . .
Compound Fracture of Tibia	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
UNCLASSIFIED.											
Abscess											
Of Lachrymal Sac	. .	1	. .	1	. .	1	. .	. .	. .	1	. . .
Perinephritic	. .	1	1	2	. .	1	. .	. .	1	2	. . .
Of Thigh	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
Of Perineum	. .	3	1	4	3	1	. .	. .	. .	4	. . .
Of Ankle	. .	2	2	4	2	1	. .	1	. .	4	. . .
Ulcers											
Chronic	13	16	25	41	17	20	11	4	1	53	1
Varicose	1	5	2	7	. .	5	3	. .	. .	8	. . .
Specific	. .	2	. .	2	. .	1	. .	. .	. .	1	1
Tumors											
Fatty	. .	1	3	4	2	1	1	. .	. .	4	. . .
Fibroid of Neck	. .	3	1	4	1	2	1	. .	. .	4	. . .
Lipoma	1	3	. .	3	. .	3	1	. .	. .	4	. . .
Gun-shot Wound	1	1	. .	1	. .	1	. .	. .	1	2	. . .
Wound of Penis	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Carried forward . . .	89	915	410	1325	638	423	75	67	98	1301	113

Surgical Diseases.— Concluded.

DISEASES.	In Hospital, May 1, 1872.	ADMITTED.			DISCHARGED.						Remaining in Hospital April 30, 1873.
		Males.	Females.	Total.	Well.	Relieved.	Not Relieved.	Not Treated.	Died.	Total.	
Brought forward . . .	89	915	410	1325	638	423	75	67	98	1301	113
UNCLASSIFIED. — *Con.*											
Wound of Scrotum	1	1	. .	1	1	1	. .	. .	. .	2	. . .
Inflammation of Meatus of Ear . .	. .	. .	1	1	. .	. .	. .	1	. .	1	. . .
Catarrh of Middle Ear	. .	2	1	3	. .	2	1	. .	. .	3	. . .
Fistula of Neck	. .	. .	1	1	1	. .	. .	. .	. .	1	. . .
Furunculus	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
Ingrowing Toe-nail	. .	2	. .	2	2	. .	. .	. .	. .	2	. . .
Eczema	. .	2	. .	2	1	1	. .	. .	. .	2	. . .
Poisoning, Mercurial	. .	. .	1	1	. .	. .	. .	. .	1	1	. . .
Malingering	. .	1	. .	1	. .	. .	. .	1	. .	1	. . .
Totals	90	925	414	1339	645	427	76	69	99	1316	113

TABLE OF OPHTHALMIC PATIENTS,

From May 1, 1872, *to April* 30, 1873.

DISEASES.	Remaining in Hos. May 1, 1872	Admitt'd			Discharged.	Remaining in Hos. May 1, 1873	OPERATIONS.	Right Eye.	Left Eye.	No. Operations	Successful.	Unsuccessful.	Relieved.	Still under Treatment.
		Males.	Females.	Total.										
Cataract, hard	. .	13	14	27	25	2	Flap with Suture. . .	3	2	5	5	.	.	. .
							Flap without Suture	1	1	2	2	.	.	. .
							Median Flap	10	8	18	15	.	.	3
							Graefe's	2	3	5	.	1	4	. .
							Iridectomy	1	1	2	2	.	.	. .
Cataract, soft	. .	.	2	2	2	. .	Discission	.	2	2	.	.	2	. .
Cataract, traumatic . .	. .	3	.	3	3	. .	Discission	3	.	3	.	.	3	. .
Opaque Capsule	. .	1	.	1	.	1	Division of Capsule . .	1	.	1	.	.	.	1
Occlusion of Pupil . .	. .	.	1	1	1	. .	Iridectomy	1	1	2	.	.	2	. .
Adherent Leucoma . .	. .	1	1	2	2	. .	Iridectomy	.	2	2	2	.	.	. .
Posterior Synechiæ . .	. .	1	2	3	3	. .	Iridectomy	1	1	2	2	.	.	. .
							Passevänt's Operation	1	.	1	1	.	.	. .
Wound of Cornea and Lens	. .	1	.	1	1	. .	Iridectomy	.	1	1	1	.	.	. .
Ulcer of Cornea	. .	5	4	9	9	. .	Iridectomy	1	1	2	2	.	.	. .
							Paracentesis	.	1	1	1	.	.	. .
Abscess of Cornea . .	. .	.	1	1	1	. .								
Keratitis	. .	1	1	2	2	. .								
Hypopion Keratitis . .	1	.	.	.	1	. .								
Trachoma	. .	1	1	2	2	. .								
Pannus	. .	1	.	1	1	. .								
Symblepharon	. .	.	1	1	1	. .	Plastic of Conjunctiva .	.	1	1	1	.	.	. .
Phlyctenular Conjunctivitis	. .	.	1	1	1	. .								
Gonorrhœal Ophthalmia	. .	1	.	1	1	. .	Paracentesis	1	.	1	.	1	.	. .
							Enucleation	1	.	1	1	.	.	. .
Trichiasis and Entropion	. .	.	2	2	2	. .	Canthoplasty	1	1	2	2	.	.	. .
							Grooving of Cartilage	1	.	1	1	.	.	. .
Rodent Ulcer	1	1	.	1	2	. .	Excission of Ulcer and Plastic	1	.	1	1	.	.	. .
Iritis	. .	2	2	4	4	. .								
Amblyopia	. .	.	1	1	1	. .								
Neuro-Retinitis	. .	1	.	1	1	. .								
Glaucoma	. .	1	.	1	1	. .	Iridectomy	1	1	2	2	.	.	. .
Anterior Staphyloma .	. .	2	.	2	2	. .	Enucleation	1	1	2	2	.	.	. .
Inflammation of Globe .	. .	2	.	2	2	. .	"	1	1	2	2	.	.	. .
Atrophy of Globe . . .	. .	1	.	1	1	. .	"	1	.	1	1	.	.	. .
Panophthalmitis	. .	1	.	1	1	. .	Abscission and removal of Contents	.	1	1	1	.	.	. .
Dislocation of Lens . .	. .	.	1	1	1	. .	Enucleation	.	1	1	1	.	.	. .
Tumor of Orbit	. .	1	.	1	1	. .	Extirpation of Tumor .	1	.	1	1	.	.	. .
Paralysis of 3d nerve .	. .	1	.	1	1	. .								
Paralysis of 5th nerve .	. .	1	.	1	1	. .								
Totals	2	43	35	78	77	3		35	31	66	49	2	11	4

OUT-PATIENTS' DEPARTMENT.

MEDICAL.

IN CHARGE OF DRS. DOE AND HASKINS.

MEDICAL DISEASES, TREATED AS OUT-PATIENTS.

DISEASES.	Men.	Women	Boys.	Girls.	Total.
GENERAL DISEASES.					
A.					
1. Small Pox	2	1	1	....	4
4. Measles	....	....	3	3	6
9. Typhoid Fever	2	....	....	1	3
12. Febricula	6	4	6	9	25
Quotidian	4	1	....	....	5
Tertian	6	2	....	....	8
Irregular	5	1	....	....	6
Debility	46	179	7	8	240
Choleraic Diarrhœa	....	....	2	3	5
20. Hooping Cough	....	2	2	3	7
21. Mumps	1	1	1	....	3
22. Influenza	2	....	....	....	2
30. Erysipelas	4	3	....	....	7
B.					
34. Acute Rheumatism	2	1	....	....	3
35. Gonorrhœal Rheumatism	8	....	....	....	8
37. Muscular Rheumatism	58	24	1	1	84
38. Chronic Rheumatism	50	62	....	....	112
Primary	15	2	....	....	17
Secondary	37	15	....	....	52
49. Scrofula	....	3	....	1	4
Scrofulous Disease of Glands	4	4	3	2	13
Phthisis Pulmonalis	114	111	3	6	234
Hæmoptysis	13	8	....	1	22
50. Rachitis	....	....	1	....	1
54. Scurvy	26	78	24	32	160
55. Anæmia	....	10	1	1	12
56. Chlorosis	3	2	....	....	5
Carried forward	408	514	55	71	1048

Medical Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	408	514	55	71	1048
DISEASES OF THE SPINAL CORD AND MEMBRANES.					
Myelitis	3	4	. . . .	. . . .	7
DISEASES OF THE NERVES.					
Hemiplegia	4	4	. . . .	. . . .	8
Infantile Paralysis	. . . .	. . . .	6	3	9
Local Paralysis	4	1	1	1	7
FUNCTIONAL DISEASES OF NERVOUS SYSTEM.					
93. Epilepsy, Single Fit	4	1	2	. . . .	7
94. Convulsions	. . . .	2	. . . .	2	4
98. Chorea	2	. . . .	3	8	13
99. Hysteria	. . . .	8	. . . .	1	9
101. Neuralgia (General)	13	15	. . . .	. . . .	28
Facial. Tic Douloureaux	5	12	. . . .	1	18
Hemicrania	5	5	. . . .	. . . .	10
Sciatica	20	5	2	. . . .	27
Pleurodynia	14	5	. . . .	. . . .	19
Cephalalgia	14	14	3	1	32
102. Hyperæsthesia	1	. . . .	. . . .	. . . .	1
103. Anæsthesia	2	. . . .	. . . .	. . . .	2
104. Hypochondriasis	7	4	. . . .	. . . .	11
DISEASES OF INTELLECT.					
106. Melancholia	2	. . . .	. . . .	. . . .	2
107. Dementia	. . . .	2	. . . .	1	3
Syphilomania	1	. . . .	. . . .	. . . .	1
110. Imbecility	4	. . . .	. . . .	. . . .	4
DISEASES OF THE CIRCULATORY SYSTEM.					
DISEASES OF THE HEART AND ITS MEMBRANES.					
225. Valve Disease	1	. . . .	. . . .	. . . .	1
Aortic	9	11	3	. . . .	23
Mitral	10	6	1	2	19
Carried forward	533	616	76	91	1313

Medical Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	533	613	76	91	1313
DISEASES OF THE HEART AND ITS MEMBRANES. — *Con.*					
229. Hypertrophy	1	1	. . . .	. . . .	2
230. Dilatation	. . . .	1	. . . .	. . . .	1
236. Aneurism	1	. . . .	. . . .	. . . .	1
DISEASES OF THE ARTERIES.					
250. Aneurism	1	. . . .	. . . .	. . . .	1
DISEASES OF RESPIRATORY SYSTEM.					
288. Croup	. . . .	. . . .	1	. . . .	1
DISEASE OF NOSTRILS.					
289. Nasal Catarrh	15	15	4	3	37
DISEASES OF LARYNX.					
292. Laryngeal Catarrh	. . . .	1	. . . .	. . . .	1
293. Laryngitis	2	2	. . . .	. . . .	4
302. Aphonia	. . . .	1	. . . .	. . . .	1
DISEASES OF TRACHEA AND BRONCHI.					
306. Bronchitis	102	77	57	40	276
Chronic	12	9	5	3	29
314. Asthma	4	4	2	. . . .	10
DISEASES OF THE LUNGS.					
315. Pneumonia	6	2	1	1	10
317. Gangrene	2	. . . .	. . . .	. . . .	2
322. Emphysema	1	1	. . . .	. . . .	2
326. Chronic Pneumonic Phthisis	2	. . . .	. . . .	. . . .	2
DISEASES OF THE PLEURA.					
331. Pleurisy	25	11	3	. . . .	39
332. Chronic Pleurisy	1	. . . .	. . . .	. . . .	1
Pleuro Pneumonia	1	. . . .	. . . .	. . . .	1
DISEASES OF THE DIGESTIVE SYSTEM.					
348. Stomatitis	. . . .	4	4	4	12
Carried forward	709	742	153	142	1746

Medical Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	709	742	153	142	1746
DISEASES OF THE TEETH, GUMS, ETC.					
365. Teething	....	....	7	6	13
DISEASES OF THE FAUCES AND PALATE.					
419. Sore Throat	....	2	2	1	5
421. Ulcerated Throat	1	1	....	....	2
423. Tonsillitis	30	12	7	8	47
DISEASES OF THE PHARYNX.					
431. Pharyngitis	25	30	4	5	64
DISEASES OF THE STOMACH.					
449. Gastritis	5	2	....	....	7
450. Chronic Ulcer	1	....	....	....	1
460. Dyspepsia	120	190	9	10	319
461. Gastrodynia	1	1	....	....	2
462. Pyrosis	2	2	1	....	5
Cancer	1	....	....	....	1
DISEASES OF THE INTESTINES.					
466. Dysentery	3	3	3	1	10
484. Diarrhœa	9	2	16	16	43
486. Colic	3	3	3	1	10
487. Constipation	38	27	6	4	75
Ascaris Lumbricoides	....	....	9	13	22
Ascaris Vermicularis	1	....	....	....	1
Tænia Solium	1	....	....	....	1
DISEASES OF THE LIVER.					
501. Hepatitis	....	2	....	....	2
504. Simple Enlargement	....	2	....	....	2
506. Cirrhosis	3	....	....	....	3
513. Jaundice	8	3	5	3	19
Hydatids	....	1	....	....	1
DISEASES OF THE SPLEEN.					
526. Congestion. (Ague Cake.)	....	....	1	....	1
Carried forward	961	1025	226	210	2402

Medical Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	961	1025	226	210	2402
DISEASES OF PERITONEUM.					
531. Peritonitis	....	1	....	....	1
DISEASES OF URINARY SYSTEM.					
DISEASES OF KIDNEY.					
538. Bright's Kidney	19	16	3	1	39
Acute	1	1	....	....	2
Chronic	1	....	....	....	1
539. Suppurative Nephritis	....	1	....	....	1
540. Abscess	1	....	....	....	1
554. Suppression of Urine	1	1	....	....	2
555. Diuresis	2	1	....	....	3
DISEASES OF THE BLADDER.					
557. Cystitis	8	1	....	....	9
573. Irritability	7	2	....	....	9
576. Incontinence of Urine	1	1	2	....	4
577. Retention of Urine	2	....	....	....	2
DISEASES OF WOMEN, OF THE OVARY.					
630. Inflammation	....	1	....	....	1
636. Encysted Dropsy	....	1	....	....	1
637. Complex Cystic Tumor	....	1	....	....	1
DISEASES OF THE WOMB.					
654. Catarrh (Leucorrhœa)	....	13	....	....	13
655. Inflammation	....	4	....	....	4
658. Ulcer	....	12	....	....	12
667. Malignant Tumors	....	1	....	....	1
Fibrous Tumors	....	1	....	....	1
Anteversion	....	1	....	....	1
Retroversion	....	1	....	....	1
Anteflexion	....	1	....	....	1
Prolapsus	....	8	....	....	8
Carried forward	1004	1095	231	211	2521

Medical Out-Patients. — *Concluded.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	1004	1095	231	211	2521
DISEASES OF THE WOMB. — *Con.*					
671. Inflammation of Vagina	. . . .	1	. . . .	. . . .	1
681. Pruritus	. . . .	3	. . . .	. . . .	3
FUNCTIONAL DISEASES OF WOMEN.					
690. Amenorrhœa	. . . .	3	. . . .	. . . .	3
693. Dysmenorrhœa	. . . .	1	. . . .	. . . .	1
694. Menorrhagia	. . . .	8	. . . .	. . . .	8
DISEASES OF PREGNANCY.					
695. Metritis	. . . .	2	. . . .	. . . .	2
698. Hysteralgia	. . . .	1	. . . .	. . . .	1
703. Abortion	. . . .	1	. . . .	. . . .	1
Vomiting	. . . .	19	. . . .	. . . .	19
POISONS.					
METALS AND THEIR SALTS.					
907. Mercury	1	. . . .	. . . .	. . . .	1
908. Lead	3	. . . .	. . . .	. . . .	3
Colic	1	. . . .	. . . .	. . . .	1
VEGETABLE POISONS.					
938. Alcohol	14	. . . .	. . . .	. . . .	14
Tobacco	3	. . . .	. . . .	. . . .	3
Totals	1026	1134	231	211	2602

OUT-PATIENTS' DEPARTMENT.

SURGICAL.

IN CHARGE OF VISITING SURGEONS.

Surgical Diseases Treated as Out-Patients.

Abscess —	
" Alveolar	41
" Axillary	20
" Cervical	25
" Facial	9
" Ischio-rectal	2
" Leg	3
" Mammary	10
" Palmar	2
" Perineal	7
Adenitis	46
Amputations, Primary	23
" Secondary	1
Ankylosis —	
" False	9
Anthrax	1
Arthritis, Chronic	7
Atrophy, Muscular	1
Balanitis	1
Bites	2
Bladder, Irritable	1
Breast, Acute Inflammation of	1
" Chronic " "	1
Bronchocele	1
Bubo	12
" Suppurating	5
Bunion, Inflamed	3
Burns	17
Bursa, Enlarged	15
" Suppurating	2
Capillary Relaxation	1
Calculus, Urinary	1
Cancer	2
Carbuncle	1
Caries, Vertebræ	13
Cartilage, Movable	1
Cellulitis	66
Chancre	13
Chancroid	8
Cicatrix, of Burns	1
" Pigmented	1
Condylomatæ	5
Contusions	130
Corns	4

Cystitis	3
Cephalæmatoma	1
Dislocations —	
" Clavicle, Acromial end	2
" Clavicle, Sternal end	1
" Complete, Costal Cartilage	1
" Complete, Thumb	2
" Finger	1
" Partial, Elbow	2
" " Knee	1
" Old	7
" Phalanx	1
" Rib	1
" Shoulder	5
Eczema	10
Enchondroma	1
Epididymitis	3
Epithelioma	8
Epulis	5
Erysipelas	9
Exostosis	1
Felons	77
Fingers, Contracted	1
Fistula in Ano	10
Flatfoot	5
Foreign bodies in Arm	1
" " Foot	2
" " Finger	6
" " Hand	10
" " Leg	2
" " Nates	1
" " Nose	3
" " Œsophagus	5
" " Various parts	2
Fracture of Clavicle	25
" " Fibula	4
" " Humerus	7
" " " External Condyle	3
" " Humerus, Internal Condyle	1
" " Ossa Nasi	1

Fracture of Inferior Maxillary	5
" " Metacarpus	4
" " Metatarsus	1
" " Phalanges of Fingers	15
" " Phalanges of Toes	1
" " Radius	33
" " Ribs	7
" " Tibia	1
" " Ulna	1
" " Forearm	5
" Greenstick	4
" Colles'	2
" Pott's	1
" Old	43
" Ununited	1
Frostbite	6
Furunculus	19
Finger, Strangulated by Ring	1
Ganglions	4
Glands, Suppurating	6
Goitre	1
Gonorrhœa	20
Gums, Spongy	1
Hemorrhoids	8
Hernia, Femoral	3
" Inguinal	22
" Umbilical	2
Herpes	1
Housemaid's Knee	1
Hydrocele	14
" of the cord	2
" " " neck	1
Hypertrophy of the Nose	1
Leg, Œdema of	1
Leucocythæmia	1
Ligaments, Relaxed	3
Lupus	1
Mental Impotence	1
Mollities Ossium	1
Morbus Coxæ	19
Nævus	4
Necrosis	27
Neuralgia	5
Odontalgia	390
Onychia Maligna	1

Orchitis	9
Ozæna	5
Paralysis	7
" of Bladder	1
" Infantile	1
" of Deltoid	11
" " Ulnar Nerve	1
Paraphymosis	1
Parasitic disease (skin)	1
Paronychia	1
Periostitis	8
Phlebitis	4
Phymosis	3
Pigeon Breast	3
Polypus Nasi	2
Prolapsus Ani	1
Prostate, Enlarged	1
Poison, Animal	1
Rachitis	1
Ranula	1
Sinus	10
Spermatorrhœa	1
Sprains, Ankle	47
" Back	58
" Elbow	32
" Shoulder	41
" Wrist	64
Spine, Concussion of	1
" Disease of	2
" Angular Curvature of	1
" Lateral " "	1
Septum Nasi, Perforated	1
Sternum, Depressed	1
Stricture	4
Synovitis, Chronic	27
" Sub-acute	4
Syphilophobia	1
Syphilis	8
" Secondary	2
" Tertiary	10
Talipes Varus	10
" Valgus	4
Teething	1
Tongue-tie	8
Toe-nails, Ingrowing	2
Tendons, Contracted	1
Tonsillitis	19

Torticollis	4
Tumors	10
“ Carcinomatous	3
“ Cystic	2
“ Fatty	2
“ Fibro-cellular	4
“ Vascular	1
“ Malignant	1
“ Simple	2
“ of the Breast	2
“ “ Nates	1
“ “ Neck	2
“ Œsophagus	1
Testes, Undescended	1
Ulcers, Chronic	76
“ Rodent	1
“ Simple	34
“ Scrofulous	2
“ Specific	29
“ Varicose	41
Urine, Incontinence of	1
“ Retention of	3

Varicocele	4
Varix	10
Venereal	2
Warts	1
Weak Joints	4
Wens	12
White Swelling	1
Wounds, Contused	30
“ “ and Lacerated	68
“ Gunshot	2
“ Incised	31
“ “ and Lacerated	40
“ Punctured	1
“ of Face	4
“ “ Scalp	13
“ “ Lower Extremities	2
“ “ Upper “	61
Sent to Medical Department	12
“ Surgical “	4
Total	2386

OUT-PATIENTS' DEPARTMENT.

EYE AND EAR.

IN CHARGE OF — EYE { DR. WILLIAMS.
DR. WADSWORTH.

" " EAR — DR. GREEN.

DISEASES OF THE EYE.

FROM MAY 1, 1872, TO APRIL 30, 1873, (*inclusive.*)

DISEASES.	Men.	Women	Boys.	Girls.	Total.
CONJUNCTIVA.					
Conjunctivitis, Catarrhal	125	163	39	43	370
Phlyctenular	8	27	25	73	133
Purulent	1	1	....	....	2
Neonatorum	....	....	1	....	1
Trachoma	40	61	7	6	114
Ecchymosis, subconjunctival	4	1	....	1	6
Traumatic injury of conjunctiva	7	1	4	....	12
Foreign bodies in conjunctiva	10	3	....	....	13
Fungus of conjunctiva	....	1	....	1	2
Cyst of conjunctiva	....	1	....	....	1
Tumor of conjunctiva	1	....	....	....	1
Pinguecula	1	....	....	....	1
Pterygium	1	....	....	....	1
Symblepharon	1	....	....	....	1
CORNEA AND SCLERA.					
Keratitis	1	4	2	5	12
Phlyctenular	1	5	8	39	53
Vascular	1	....	....	1	2
Insterstitial	1	....	1	....	2
Abscess of Cornea	1	....	....	....	1
Ulcer of Cornea	35	24	24	41	124
Opacity of Cornea	20	10	10	21	61
Suppuration of Cornea	1	....	....	....	1
Perforation of Cornea	1	....	....	....	1
Traumatic injury of Cornea	5	2	4	3	14
Foreign bodies in Cornea	40	5	3	....	48
Pannus	4	....	....	....	4
Hypopion-Keratitis	1	1	....	....	2
Carried forward	311	310	128	234	983

Ophthalmic Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	311	310	128	234	983
CORNEA AND SCLERA. — *Con.*					
Anterior Staphyloma	2	1	2	1	6
Sclero-Keratitis	1	....	....	....	1
Episcleritis	....	3	....	....	3
RETINA AND OPTIC NERVE.					
Retinitis	1	2	....	....	3
Pigmentosa	1	....	....	....	1
Hæmorrhage in Retina	....	1	....	....	1
Separation of Retina	3	3	....	....	6
Neuro-retinitis	....	1	....	....	1
Neuritis	1	1	....	....	2
Atrophy of Optic Nerve	10	7	2	1	20
Hæmeralopia	1	....	....	....	1
Amblyopia	3	17	1	1	22
IRIS AND CHOROID.					
Iritis	1	....	....	....	1
Rheumatic	4	5	....	....	9
Traumatic	1	....	....	....	1
Syphilitic	10	9	2	....	21
Serosa	....	1	....	....	1
Wounds of Iris	1	....	1	....	2
Hæmorrhage in Anterior Chamber	1	....	1	....	2
Anterior Synechiæ	....	1	1	....	2
Posterior Synechiæ	2	....	....	....	2
Occlusion of Pupil	1	1	....	1	3
Irido-dialysis	1	....	....	....	1
Keratitis	1	....	....	....	1
Choroiditis	2	2	....	....	4
Choroiditis	2	2	....	2	6
Changes in Region of Macula	....	1	....	....	1
Posterior Staphyloma	3	6	....	1	10
Glaucoma	1	1	....	....	2
Carried forward	365	375	138	241	1119

Ophthalmic Out-Patients. — *Continued.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	365	375	138	241	1119
VITREOUS.					
Opacities in Vitreous	3	3	. . . .	. . . .	6
LENS.					
Cataract, hard and soft	10	12	. . . .	. . . .	22
Traumatic	2	1	1	. . . .	4
Pyramidal	1	. . . .	. . . .	. . . .	1
Cortical	. . . .	1	. . . .	. . . .	1
Dislocation of Lens	1	1	2	. . . .	4
ACCOMMODATION AND REFRACTION.					
Myopia	2	2	2	3	9
Hypermetropia	10	27	1	4	42
Presbyopia	1	1	. . . .	. . . .	2
Astigmatism	1	1	. . . .	. . . .	2
Asthenopia	3	3	. . . .	1	7
LACHRYMAL APPARATUS.					
Stricture of Lachrymal Canal	6	17	2	. . . .	25
Closure and Displacement of Puncta	. . . .	1	. . . .	. . . .	1
Abscess of Lachrymal Sac	1	1	. . . .	. . . .	2
Dacryocystitis	2	2	3	3	10
LIDS AND ORBIT.					
Blepharitis	15	36	26	38	115
Hordeolum	3	11	2	4	20
Abscess of Lid	1	. . . .	. . . .	. . . .	1
Nævus of Lid	. . . .	. . . .	. . . .	1	1
Epithelioma of Lid	1	1	. . . .	. . . .	2
Rodent Ulcer	. . . .	1	. . . .	. . . .	1
Xanthelasma Palpebrarum	. . . .	1	. . . .	. . . .	1
Molluscum	. . . .	1	2	. . . .	3
Chalazion	2	2	6	. . . .	10
Cyst of Lid	1	. . . .	. . . .	. . . .	1
Ecchymosis of Lid	1	2	. . . .	. . . .	3
Wounds of Lid	1	. . . .	. . . .	. . . .	1
Carried forward	433	503	185	295	1416

Ophthalmic Out-Patients. — *Concluded.*

DISEASES.	Men.	Women	Boys.	Girls.	Total.
Brought forward	433	503	185	295	1416
LIDS AND ORBIT. — *Con.*					
Burns of Lid	1	....	....	....	1
Chancroid of Lid	1	....	....	....	1
Œdema of Lid	....	....	....	1	1
Eczema of Lid	1	....	....	1	2
Erysipelas of Lid	....	1	....	....	1
Ptosis	3	1	1	....	5
Entropion	3	16	2	....	21
Ectropion	....	1	....	....	1
Necrosis and Caries	1	....	....	....	1
MUSCLES AND NERVES.					
Convergent Strabismus	1	4	8	9	22
Divergent	1	1	....	....	2
Insufficiency of Internal Recti	2	5	....	2	9
Paralysis of 3d Pair	2	2	....	....	4
Paralysis of 4th Pair	1	....	....	....	1
Paralysis of 6th Pair	2	2	....	1	5
Paralysis of Facial	1	....	....	....	1
Mydriasis	....	....	1	....	1
Blepharospasm	....	2	....	2	4
Supraorbital Neuralgia	2	1	....	....	3
GENERAL AFFECTIONS OF GLOBE.					
Sympathetic Ophthalmia	....	1	....	....	1
Wound of Globe	5	1	....	....	6
Disorganization of Globe	1	1	....	....	2
Atrophy of Globe	2	2	....	....	4
Foreign Body in Globe	1	....	....	....	1
Exophthalmos	....	....	....	1	1
IMAGINARY DISEASES.					
Muscæ Volitantes (physiological)	1	1	....	....	2
Total	465	545	197	312	1519

Operations performed on Eye Patients in the Out-Patients' Department.

Tenotomy of External Rectus	1
" " Internal "	13
Foreign Bodies removed from Cornea	33
Staphyloma of Cornea, removed	3
Tattooing of Cornea	3
Paracentesis	2
Hernia of Iris, excised	2
Iridectomy	5
Enucleation	2
Anterior portion of Globe, removed	1
Abcess of Lachrymal Sac, incised	2
Canthoplasty	1
Trichiasis, hair bulbs dissected out	1
Entropion, operation for	1
Ectropion, operation for	1
Cystic Tumor of Lid, removed	6
Chalazion, removed	3
Wart of Lid, "	1
Abscess of Lid, incised	5
Total	86

To the Trustees of the Boston City Hospital :—

Gentlemen, — The number of patients treated in the Aural Department of the Hospital, during the past year, was 210, and the number of visits was 1,251.

The apparent falling off in the number of patients was due to my absence in Europe, during the winter, when the department was closed for some three months.

The needs of this branch of the Hospital, to which attention has already been called in previous reports, remain as yet unfulfilled, but will, I trust, receive your attention at the earliest possible moment.

Respectfully submitted,

J. ORNE GREEN.

Boston, April 30, 1873.

DISEASES OF THE EAR.

TREATED AS OUT-PATIENTS.

DISEASES.	Males.	Females.	Total.
DISEASES OF THE AURICLE.			
Eczema			
Acute, one side 5	. .	. .	. .
both sides 1	2	4	6
Chronic, one side	. .	. .	. .
both	. .	. .	. .
Molluscum Simplex	1	. .	1
Inflammation	1	. .	1
Abscess	1	. .	1
Herpes Zoster Auricularis	. .	1	1
DISEASES OF EXTERNAL MEATUS.			
Inflammation			
Acute, one 5	. .	. .	. .
both 1	3	3	6
Chronic, one	. .	. .	. .
both 2	1	1	2
Accumulation of Cerumen	21	9	30
Eczema	1	2	3
Pruritus	1	. .	1
Foreign Body	1	. .	1
Atresia (acquired one side)	. .	1	1
DISEASES OF THE TYMPANUM.			
Catarrhal Inflammation			
Acute, one 15	. .	. .	. .
both 10	13	12	25
Chronic, one 1	. .	. .	. .
both 10	1	10	11
with serous effusion	1	1	2
Carried forward	48	44	92

Diseases of the Ear. — *Concluded.*

DISEASES.		Males.	Females.	Total.
Brought forward		48	44	92
DISEASES OF THE TYMPANUM. — *Con.*				
Purulent Inflammation.				
Acute, one	13	. .	. .	. .
both	11	. .	. .	. .
Chronic, one	15	. .	. .	. .
both	17	. .	. .	. .
with inflammation mastoid	3	. .	. .	. .
" papillomata	1	. .	. .	. .
" polypus	4	. .	. .	. .
" necrosis mastoid	1	29	36	65
Results of previous pur. infl.		4	4	8
Plastic Inflammation, one	7	. .	. .	. .
both	13	10	10	20
Neuralgia of Tympanic Plexus		. .	2	2
DISEASES OF INTERNAL EAR.				
Nervous deafness		2	. .	2
Meniere's disease		3	2	5
Deaf-mutism, acquired		. .	2	2
" from Cerebro-spinal Meninigitis		3	2	5
OTHER DISEASES.				
No diagnosis		5	3	8
Referred to other departments		. .	2	2
Totals		104	107	211

Diseases of the Ear.

	Males.	Females.	Total.
OPERATIONS.			
Polypi	..	..	6
Papillomata	..	..	2
Paracentesis mem. tym.			
For acute inflammation	..	..	5
" abnormal tension	..	..	3
Abscess of meatus	..	..	3
Wilde's incision of mastoid	..	..	1
Abscess of gland	..	..	1
Tenotomy of Tensor Tympani muscle	..	..	1
Total	..	..	22

OUT-PATIENTS' DEPARTMENT.

CUTANEOUS DISEASES.

IN CHARGE OF H. F. DAMON, M. D.

To the Board of Trustees of the Boston City Hospital:

Gentlemen, — The following tables exhibit the statistics of the Department for Cutaneous Diseases among Out-patients for the past year, and the aggregate of the past five years.

During the past year, 809 cases have been treated, and 2,763 visits made; while, during the past five years, 5,206 cases have been treated, and 16,403 visits have been made.

The remarks in last year's report, in regard to contagious and rare diseases, and also in regard to those seen at the request of the physicians and surgeons in the wards of the Hospital, are equally applicable now. It is a subject of regret that the accommodations for this class of patients are such as to make a thorough examination of their condition impossible. Not only is science the loser, but the patients themselves feel the necessity of such inspection of their diseases as will contribute to a better understanding of them, and perhaps more appropriate method of treatment. It is our earnest desire that every facility be given for the proper examination and treatment of these unsightly and painful affections, not only for the good of the patients themselves, but for those also who are brought in daily contact with them.

Respectfully submitted,

HOWARD F. DAMON, M. D.

Boston, City Hospital, April 30, 1873.

Contagious Diseases for the year ending April 30, 1873.

DISEASES.	May.	June.	July.	August.	September.	October.	Nobember.	December.	January.	February.	March.	April.	Total.
Eczema	38	13	16	15	21	25	26	12	9	10	19	32	236
Syphilodermata	12	8	5	12	3	6	2	4	2	5	10	1	70
Impetigo	7	4	6	2	5	2	2	4	0	1	2	1	36
Phytodermata	7	6	6	8	6	2	6	0	1	1	5	5	53
Urticaria	3	3	8	15	5	5	0	2	0	2	0	2	45
Erythema	1	4	5	3	0	2	0	1	1	2	4	1	24
Furunculus	3	3	19	11	5	1	2	2	0	0	1	0	47
Scabies	2	0	0	0	0	1	0	0	0	0	0	1	4
Acne	9	5	2	4	2	4	1	2	3	1	2	4	39
Lichen	2	0	13	3	1	3	2	0	0	0	0	1	25
Zoster	1	2	5	1	0	3	0	0	3	0	1	0	16
Pediculi	3	1	2	4	4	4	3	1	0	0	0	3	25
Psoriasis	7	1	5	1	4	1	1	0	1	0	0	1	22
Erysipelas	3	0	0	0	0	0	0	0	0	0	1	1	5
Pruritus	3	0	1	1	2	2	0	2	0	0	1	2	14
Lupus	1	1	1	1	1	0	0	0	0	1	0	0	6
Epihidrosis	3	1	12	0	1	1	0	0	0	0	0	0	18
Scarlatina	0	0	0	0	0	0	20	1	1	0	0	1	23
Hæmorrhagiæ	0	1	0	0	2	0	0	0	0	0	0	0	3
Alopecia	1	2	0	3	0	1	2	1	0	0	1	0	11
Rubeola	7	11	0	0	0	0	3	0	0	0	1	0	22
Miscellaneous	12	8	5	4	6	7	8	2	3	3	0	7	65
Total	125	74	111	88	68	70	78	34	24	26	48	63	809

Cutaneous Diseases for five years ending April 30, 1873.

DISEASES.	May.	June.	July.	August.	September.	October	November.	December.	January.	February.	March.	April.	Total.
Eczema	152	110	100	97	108	105	91	89	116	110	130	130	1,338
Syphilodermata	66	51	71	70	45	45	40	39	50	51	71	43	642
Impetigo	27	13	23	31	23	25	12	17	20	22	21	28	262
Phytodermata	24	26	34	43	32	32	26	16	25	13	21	33	325
Urticaria	14	19	28	63	56	16	10	7	8	10	9	20	260
Erythema	13	28	30	15	13	13	21	27	18	17	19	28	242
Furunculus	14	14	65	56	24	6	8	17	8	12	8	9	241
Scabies	12	5	3	1	4	6	15	17	15	3	12	7	100
Acne	19	14	10	11	11	15	9	10	20	12	10	24	165
Lichen	7	11	50	38	9	9	5	3	3	2	0	2	139
Zoster	16	16	12	12	15	11	9	8	15	9	7	8	138
Pediculi	10	6	6	9	15	15	9	8	12	5	9	16	129
Psoriasis	18	12	8	3	9	12	5	5	14	8	8	8	110
Erysipelas	17	7	8	5	0	4	4	21	21	20	19	18	144
Pruritus	15	5	10	3	6	9	6	7	13	3	9	14	100
Lupus	7	4	4	3	2	5	1	3	7	5	1	3	45
Epihidrosis	9	8	36	18	9	5	1	0	2	1	7	3	99
Scarlatina	2	9	1	1	0	4	24	4	4	5	12	4	70
Hæmorrhagiæ	4	8	5	2	5	3	2	4	3	2	4	3	45
Alopecia	5	6	2	7	6	9	2	3	4	4	1	6	56
Rubeola	20	15	1	0	0	0	3	3	1	5	11	5	64
Miscellaneous	78	51	43	37	34	30	27	35	40	34	29	63	501
Total	549	438	550	525	426	379	330	343	419	353	419	475	5,206

BEQUESTS.

Elisha Goodnow, of Boston, by will dated July 12, 1849, makes the City of Boston residuary legatee to his estate, real and personal, for the benefit of a City Hospital. *Provided*, that one-half of the proceeds shall be applied to the establishment and perpetual maintenance of *free beds*, under the control of the government and officers of the said Hospital for the time being.

The following sums of money have been received: —

1862, June 9. From executor's balance of account at Probate Office		$623 85
1864, April 14. Proceeds of sale of estate on Cross street, containing 6,228 square feet of land	$14,907 12	
Old buildings upon same . .	223 00	
1864, December 31. From City of Boston, for 225 square feet of land taken from above estate to widen Cross street	523 36	
		15,653 48
1864, July 1. Interest on same from city to this date		222 67
Amount carried forward . . .		$16,500 00

Amount brought forward	$16,500 00
1867, November 30. From Boston, Hartford and Erie R. R. for 5,167 square feet land taken by New York Central R. R. from estate on Third street, South Boston . . .	3,875 25
1868, January 1. Proceeds of sale, balance of estate on Third street, South Boston, 1,516 square feet . . .	758 00
	$21,133 25

1869, January 1. Of the above amount, say $20,500, is invested in city scrip, interest payable semi-annually, at six per cent. per annum, and deposited with the City Auditor, who is required to receive the interest upon the said scrip, and add the same to the moneys appropriated for the use of the Hospital.

The balance on interest in the hands of the City Treasurer, to be invested as above, is $633.25.

1868, January. The $10,000 deposited by the Executors of Mr. Goodnow, June 22, 1852, with the Massachusetts Hospital Life Insurance Company, the interest upon which is to be paid to the widow, will, upon her decease, be distributed as follows: —

$500 to the Penitent Females' Refuge.

$5,000 to City of Boston; income to be expended for the relief of sick and infirm persons.

$4,500 to be added to the fund heretofore provided for the support of free beds in the City Hospital.

Lawrence Nichols, of Boston, by will dated August 19, 1862, and recorded Suffolk Registry of Wills, vol. 160, fol. 140, bequeathed to the City of Boston, towards the support of a City Hospital, the sum of one thousand dollars.

1863, April 29. The executor of Mr. Nichols paid the City Treasurer $1,000, less the United States tax .	$937 25
The City of Boston paid interest on same .	62 75
	$1,000 00

1864, July 1. The above amount, say $1,000, has been invested in City of Boston scrip, dated July 1, 1864, twenty-years, with six per cent. interest, payable semi-annually, and deposited with the City Auditor, as required by ordinance.

1865, March 14. Received as Residuary Legatee, from the estate of Mr. Nichols, and now in the hands of the Treasurer	$530 50

1868, January 1. The Trustees received the sum of two thousand dollars from Hon. Otis Norcross, as the foundation of a fund for the benefit of patients leaving the Hospital, poor and destitute of proper clothing. The principal sum is invested in a City of Boston interest-bearing note, to be deposited with the City Auditor, the interest of which is to be collected annually or oftener, and paid over to the President of the Board of Trustees, for the time being, of the City Hospital, to be by him expended at his discretion for the benefit and temporary assistance of those patients who are in his judgment deserving, and who are destitute of proper clothing in which to leave the Hospital, and having no means of procuring it.

Balance on hand May 1, 1872	$104 83
Rec'd int. July, 1872	60 00
" " Jan., 1873	60 00
Amount carried forward	$224 83

Amount brought forward	$224 83
Expended	86 92
Balance	137 91

1870, April 1. The Trustees received from the estate of Mr. Jonas Ball, the sum of one thousand dollars for the same purpose, and under the same restrictions as the Norcross fund.

Balance on hand, May 1, 1872	$120 00
Rec'd int. October, 1872	30 00
" " April, 1873	30 00
	$180 00

RULES FOR ADMISSIONS AND DISCHARGES, ETC.

Applications for admission of patients shall be made to the Resident Physician at the Hospital, on each day of the week, Sunday excepted, between 9 and 11 A. M.

Whenever able, the patient shall apply in person. When not able to appear in person, applications may be made by a friend, and the patient shall be visited at his residence.

Any Trustee, or either of the Physicians or Surgeons in attendance, may, in case of emergency, send a patient in the first instance to the Hospital by written permit, and the Visiting Committee shall decide, as soon as may be afterwards, whether such patient shall remain.

Persons accidentally wounded, or otherwise disabled or injured, shall be received at all hours.

Permits for admission shall be subject to the approval of the Visiting Committee, and they shall have the power at any time to require the Resident Physician to report to them the names of applicants before admitting them, and may dismiss any patient whom they think improperly admitted, or change the terms of admission.

Patients discharged on the recommendation of the physicians or surgeons shall be provided with a certificate stating their condition at the time of discharge, whether cured, relieved, or not-relieved, which certificate shall be signed by the Superintentent and Resident Physician.

Whenever a patient is removed from the Hospital without the consent and approval of the Superintendent and Resident Physician, a written statement to that effect shall be required from any person assuming the responsibility of the removal.

The body of any person dying at the Hospital shall not be delivered without a written receipt from the parties taking the same.

In case of the decease of any patient, the Resident Physician shall sign a certificate to that effect, and shall furnish the City Registrar with a copy of the same. He shall also state the time and cause of death, the disposition made of the body, whether delivered to friends or buried from the Hospital. In the last case he shall mention the place of interment.

Patients may be admitted by the Trustees to the privileges of the Hospital, at such rates of board as they may from time to time determine; such board being secured by their friends, or by the authorities of the place to which they belong.

In all cases where, in the opinion of the Trustees, the circumstances of the patient will warrant it, the whole or a part of the board shall be paid. If separate apartments or articles not usually furnished at the Hospital are provided, such payment shall be made therefor as the Trustees shall deem reasonable.

HOUSE RULES.

Patients must be in their proper places in the wards during the visit of the physicians and surgeons, and always by 8 P. M., unless specially exempted by the Superintendent.

Those free patients who are able, are expected to assist in nursing, and in such other services as may be reasonably required of them.

Patients shall not leave the Hospital grounds without a pass from the Superintendent, nor their respective wards without the consent of the nurse in attendance.

No patient shall purchase, or cause any member of the household to purchase for him, any article of food whatsoever, nor any other article, without the consent of the Superintendent; nor shall any officer or servant of the Hospital receive a gift or fee from a patient.

Profane or obscene language, loud talking, and incivility, are prohibited.

No patient having acute syphilitic disease, or *mania-a-potu*, shall be admitted as a charity patient, or at a lower rate than twenty-five dollars a week for the former, and fifteen dollars for the latter.

No person shall be admitted to the Hospital whose case is judged to be incurable, unless there be urgent symptoms, which in the opinion of the Physician or Surgeon are capable of being relieved.

Patients may be visited by clergymen of their own selection, and where there is a wish for the performance of any particular religious rite, it shall be indulged when practicable.

It is expected that patients will implicitly obey the rules of the Hospital. Complaints, for whatever cause, may be made to the Superintendent or Visiting Committee, and when reasonable shall be by them reported to the Trustees.

All employés must be in their respective places during their hours of duty. The doors and gates of the Hospital will be closed at 10 P. M., at which time all are expected to be quiet, and those not on duty, in their own rooms.

The use of tobacco, wine and intoxicating liquors is prohibited within the Hospital, unless prescribed by a physician.

VISITORS.

No person shall visit any part of the premises, except on business, or at such times as may be fixed for the reception of visitors, without the permission of the Superintendent, or of some one of the Trustees.

On Monday, Tuesday, Thursday and Saturday of each week, from two to three o'clock, P. M., friends may be permitted to visit patients, though no patient shall receive more than one visitor on the same day. In all cases, however, the Trustees or Superintendent may exercise discretionary powers as to excluding or admitting visitors.

All visitors must leave when the bell rings at the expiration of the visiting hour.

No visitor will be permitted to take any meal in the Hospital, or pass the night therein, without permission from the Superintendent or one of the Trustees.

No visitor shall be allowed to give any article of food or drink to a patient, unless by permission of the nurse; and any article sent to the patients shall be left with the Superintendent.

City Document.—No. 100.

CITY OF BOSTON.

REPORT

OF THE

COMMISSION APPOINTED TO INVESTIGATE THE MATTER

OF

WOODEN PAVEMENTS.

CITY OF BOSTON.

Executive Department,
City Hall, Boston, July 28th, 1873.

To the City Council of the City of Boston: —

I have the honor to transmit herewith the report of the Commission appointed under the authority of an order of the City Council of 1872, to investigate the subject of Wood Pavements, and the methods of preserving the same.

HENRY L. PIERCE, *Mayor*.

CITY OF BOSTON.

To His Honor The Mayor: —

The Commissioners appointed to investigate the matter of Wooden Pavements, etc., have the honor to submit the following report, viz.: —

This commission was appointed by his Honor Mayor Gaston, on December 17, 1872, in pursuance of an order of the Board of Aldermen, passed August 26, 1872, and approved by the Mayor, September 3, 1872.

The order of the Board of Aldermen was as follows, viz.: —

"That his Honor the Mayor be authorized to appoint a Board of Commissioners, consisting of two chemists, two practical mechanics, and one engineer, to make a thorough investigation of the several processes in use, or available for protecting wood to be used for paving from decay, and the various methods of constructing and putting down wood and stone pavements, and report to this board their opinion of the relative merits of the same.

"*Ordered*, That a premium of three hundred dollars be offered for the best essay on the most effectual method of preserving wood pavements from decay in this city, said essays to be submitted to the foregoing commission at such time as they shall publicly designate."

The first meeting of the commission was held at the office of Shedd & Sawyer, in Barristers' Hall, December 20, 1872, when organization was effected, by the choice of Edward Sawyer as President, and J. M. Merrick, Secretary.

Public notice was given in the daily journals that the commission would give hearings to all interested parties, and then such meetings were held in the City Hall.

Patentees and parties interested in wooden pavements and the preservation of wood appeared at these hearings, and set forth their views and the merits of their processes, etc., etc.

The Commissioners have held numerous private sessions, at which the matters in question have been thoroughly discussed, and they have also visited and inspected various pieces of wooden pavement in this city.

They have declined invitations to visit other cities at the expense of the persons inviting them.

As the result of their labors, they submit this report, which takes up, first, the matter of the preservation of wood, and secondly, the construction and laying of pavements.

PRESERVATION.

In regard to the matter of the preservation of wood for paving purposes, your Commissioners have to say that they have patiently and diligently sought for information upon the subject, and have listened to the statements of numerous patentees and interested parties. Each process is very warmly praised by those interested, and the patentees of one process fail of course to see any merit in their competitors' methods of preservation.

So far as your Commissioners know, there is no wooden pavement in this city, which has been down long enough to afford a proper test, which does not show considerable deterioration, owing either to defective treatment, or defects in construction; and they have not been able to find a preservative process cheap and efficient enough to be recommended to the city without qualification.

The leading processes brought to your Commissioners' notice are, —

I. Treatment of the wooden blocks with hot oil — the so-called dead oil, and other similar oils.

Of this it may be said, that the complete saturation of the wooden block with dead oil affords perhaps the most perfect preservation it is possible to attain, but this method must be put entirely out of the question, on account of the expense the use of the large quantity of oil required necessarily involves, and the slipperiness of the surface of the blocks.

The partial or incomplete treatment of the wooden blocks with oil or tar can hardly be recommended, and especially is the practice of tarring each end of the blocks to be avoided, as in this case the wood inevitably rots in the middle.

It is claimed that a partial saturation of the blocks with oil, under proper conditions, will add much to their durability, preserving them, in fact, for an indefinite time. While this *may* be the case, your Commissioners have no positive proof that this process will do its work well enough to justify them in recommending it to the city.

II. Kyanizing, or the treatment of wood by long immersion in a solution of chloride of mercury, is undoubtedly a very effective preservative process; but your Commissioners believe it is inapplicable for two reasons, viz.: its expense, which is large on account of the cost of the salt of mercury, and also on account of the danger to the health of the workmen employed.

III. Burnettizing, or treating wood with a solution of chloride of zinc, seems to be the process to which in practice we are reduced; and here the evidence laid before the commission has been of a rather contradictory nature. Many discrepancies in the statements brought to us may have had their origin in the fact that wood said to have been burnettized had not been treated at all, or had been imperfectly treated; but making allowances for this, there seem to have been some cases in which this treatment has failed to add to the durability of wood. Still, in the great majority of cases, so far as your Commissioners are informed, it has succeeded reasonably well. It should, however, be borne in mind, that paving blocks but a few inches long, cut across the grain and set on end, are under conditions different from, and probably much more trying than those to which long timbers are ordinarily exposed.

But on the whole, your Commissioners consider this process the best at present available for preserving wood to be used for pavements.

Your Commissioners are of the opinion that if the city adopts *any* method of preserving blocks to be used for pavements, some additional security should be had that the treatment of the wood shall be thorough and complete.

CONSTRUCTION OF WOOD PAVEMENTS.

For durability under the wear of travel, spruce seems to have few, if any, equals amongst the woods in common use. This, and its moderate cost, make it rather the best material for wood pavements, provided its resistance to decay can be sufficiently increased by preservative treatment.

A firm foundation is indispensable for making a good pavement. To make such a foundation, the earth of which it is composed should be saturated with water and rolled.

Many attempts have been made to overcome or mitigate the bad effects of unequal settlement in foundations, — in other words, to bridge over the depressions, — by the use of flooring under the blocks, also by interlocking the blocks, and by the use of connecting pieces between them. But a flooring one or two inches thick is not stiff enough to carry heavy loads over depressions or cavities of any considerable size, and it is hardly practicable to interlock or connect the blocks strongly enough to do this during any long time. When there are cavities or soft places, the pavement soon cripples down under ordinary use.

Floorings and connections are inconvenient, when, as often happens, it becomes necessary to take up pavements for obtaining access to pipes or sewers.

When portions of a pavement are taken up and excavations are made, it is difficult to refill and restore the pavement so that its surface will remain uniform with that of the adjoining pavement which has not been disturbed.

Your Commissioners do not hesitate to say that a very large portion of the repairs of street pavements is necessitated by the frequent tearing up for obtaining access to water-pipes, gas-pipes, and drains, or for repairs on the same. Too often, the refilling and repaving are improperly done, and the result is a bad depression, or a disagreeable elevation tending to produce a depression on each side.

If a wood pavement is to be laid on an unconsolidated foundation, flooring or connections may retard unequal settlement considerably if the travel is light, and slightly under heavy travel; but they cannot reasonably be expected to keep the pavement in permanent good condition.

Your Commissioners believe that the best method of constructing wood pavements is as follows: —

The rows of blocks should be set square across the street, and should be about four inches thick at top, with spaces of about one-half inch between the rows. This may be done with blocks of uniform thickness set apart, or with tapering blocks half an inch thicker at bottom than at top. The latter arrangement is the more costly, but it is believed by some that it will stand better, by reason of it covering the whole surface of the foundation. Longer trial is necessary to settle this point beyond dispute.

Blocks with only a short chamfer at the top leave the inter-space too narrow, as the blocks wear down.

CONSTRUCTION OF STONE PAVEMENTS.

Your Commissioners consider it important to have a firm foundation for a stone pavement. If a foundation settles much, it generally settles unequally.

Your Commissioners recommend granite blocks 4 inches thick and 8 inches high, well fitted and set close together, in rows square across the street, as the best form of stone pavement known to them.

Mr. Whidden understands the order under which this commission is acting, to call for an opinion as to the relative merits of stone and wooden pavements; the other members of the commission do not so construe the order, and hence express no opinion upon this matter.

Mr. Whidden desires to say, that with our present experience and knowledge, wooden pavement must be regarded as one of the luxuries of the age, and should be restricted to particular locations, and guardedly applied until, at least, a more extended practical trial is had.

Its merits seem to be its freedom from noise, its producing less obstruction to the traction of vehicles, and less wear. This is very agreeable and pleasant. To offset this, it is expensive at the start, if properly done, depreciates and decays early, and is entirely lost after a few years.

ESSAYS.

Your Commissioners have received a large number of essays for examination; several of which show evidences of care and study.

By direction of your Commissioners, each essay was accompanied by the writer's name enclosed in a sealed envelope, bearing a motto corresponding to one upon the essay: and only the envelope corresponding to the successful essay has been opened.

Your Commissioners are unanimous in according the premium to the writer of the essay endorsed "Competition," — Mr. F. W. Clarke, of Boston.

Respectfully submitted.

J. M. MERRICK, *Secretary.*
JAMES F. BABCOCK.
THOMAS J. WHIDDEN.
NATHANIEL O. HART.
EDWARD SAWYER.

AN ESSAY UPON THE PRESERVATION OF WOOD FROM DECAY,

WITH PARTICULAR REFERENCE TO THE PROTECTION OF WOOD PAVING.

BY F. W. CLARKE.

THAT the protection of wood from decay is one of the most important of industrial problems can hardly be denied. And yet in this country it has scarcely begun to receive proper attention. Our forests are rapidly wasting away, the price of wood is continually increasing, its applications are becoming more and more numerous, and still little is done. In 1855 lumber sold for about $18 per thousand, in 1860 for $24, and in 1865 for $45. Although a single acre of pine land yields on the average only about six thousand feet of timber, billions of feet are annually sold in the United States. At this rate our forests must soon become exterminated. The question of preservatives will force itself upon our notice so vehemently that it cannot be ignored. Prudence already insists upon a more rigid economy.

In Europe, on the other hand, much attention has been paid to the problem; England, France, and Germany taking the lead. In Great Britain alone not less than fifty patents for the preservation of wood have been taken out during the present century. To be sure, some patents have also been granted at Washington, but their value was slight. What is the consequence of this trans-Atlantic superiority? Simply that railway sleepers, bridge timbers, and telegraph posts last more than twice as long abroad as in America, and that all other exposed wood has similarly gained in durability. Surely this fact is worthy the attention of our practical men! Mere temporary cheapness cannot much longer pass with us for economy. This truth needs especially to be heeded in our great cities. In the one item of wood-paving alone a vast deal of money can be saved. By adding a very trifling percentage to the primary cost of work, at least double durability can be secured.

Many experiments demonstrate the advantage of protecting wood by chemical means. Prepared and unprepared timbers have been exposed together, and the overwhelming superiority of the former proved. A great variety of preservative methods have been found practicable. But an attempt to decide upon their relative merits is quite difficult. The material for criticism is bulky enough, but deficient in quality. All the desirable details are rarely given. A process which thoroughly protects one kind of wood may utterly fail with another. One method may succeed with seasoned timber, yet be useless for preserving green wood. Accordingly we find the most contradictory statements concerning every prominent protective process. One man finds it admirable, another denounces it as worthless. We, then, in order to get at results of true practical value, and to avoid these seeming discrepancies, have to consider several things. First, the general efficacy of each process. Secondly, the kind of wood to be used, and its condition. Thirdly, the expense, both actual and comparative. And fourthly, the particular use to which the wood is to be applied. The first and second of these questions can be settled only by the evidence of actual tests. The matter of expense involves, to some extent, the subject of locality. That method which is cheapest in one place may not be cheapest in another. The fourth question opens up considerations of this sort. Given two processes for preserving wood, one of which will protect for fifteen years and the other for only ten, the latter being a little the cheaper. If, now, we are to deal with the timbers of a bridge, the first of these processes, notwithstanding its greater expense, may be the more desirable of the two. But if we are to lay down wooden pavements which will be worn out by the wear and tear of travel long before the cheaper preservative has lost its protecting power, then the latter, though the inferior process in general, is the better for our purposes. In other words, an expense which may be advantageously incurred in one case, may be wholly unadvisable in a second. All these things we have to take into account.

The decay of wood may be generally traced to one of three causes. It is either due to slow oxidation, to the ravages of certain minute animals, or to an action induced by contact of the fibre with the decomposing albumenoid substances of the sap. It has at times been ascribed to the growth of fungi; but as these have been found to appear only after decay has fairly commenced, this supposition may be set aside. The rapidity of the change, however, is much influenced by external circumstances. In perfectly dry places wood rots but very slowly; and has been known to remain sound for hundreds of years. Completely immersed in water, except where it is exposed to the attacks of the teredo, it is similarly permanent. The piles of Old London Bridge were found to be good after having been down eight hundred years. But in damp places, or in places alternately wet and dry, especially where it is liable to frequent and great changes of temperature, wood decays very quickly. This is the case with wooden pavements. Snow, rain, sunheat, and frost are ever at work upon them. And particles of fermenting animal matter, like horse manure, are constantly getting in between the blocks, and making the difficulty greater.

Now, leaving out of account altogether the processes of drying, washing, boiling, and steaming wood, we shall find that four distinct classes of methods for its preservation have been proposed. The first class contains all those methods which deal simply with the surface of the wood, leaving the interior structure unprovided for. Every process of this sort consists merely in the application of some air-tight varnish to the wood, none of these varnishes being sufficiently valuable to warrant description here.* The second class of processes comprises those by which the surface of the wood is carbonized, and the layers immediately beneath somewhat affected also. Three plans of this sort have been proposed. In the first, which has no recommendations, the wood is charred by immersion in strong sulphuric acid. The second plan is to dip the wood into mineral oil or naphtha, then, after withdrawing it, to kindle its surface, and allow it momentarily to burn. The third process, and the one which has been the most thoroughly tested, is that of M. de Lapparent, as used in the dockyards of Cherbourg, Dantzic, and Pola.† A jet of flame from a specially constructed coal-oil lamp is thrown upon the surface of the wood to be preserved. The outer layer is carbonized, while the layers immediately beneath undergo a partial destructive distillation which results in the formation of antiseptic, empyreumatic substances within the wood. This method has been highly recommended for the preservation of ship timbers, but is manifestly inapplicable to wooden pavements. The cost of the labor involved in carbonizing the immense surface of the necessarily small blocks of wood would be unbearable. There is an improvement upon De Lapparent's process, due to Hugon.‡ The difference is in the construction of the lamp. The improved method has been successfully employed in France for the preservation of telegraph posts.

In the third class of processes we find all those whereby the wood may be charged with insoluble mineral substances, and so protected from change. These all depend upon the principle of double decompositions; the wood being successively impregnated with two solutions which are capable of precipitating each other. Methods of this sort were proposed by Gossier, in 1828; Treffry, in 1838; and Fliselli, in 1840. In 1837, the Industrial Society of Annaberg recommended the use of water-glass and hydrochloric acid. Ransome seems to have reiterated this suggestion, possibly with modifications, in 1845. Burkes, 1844, proposed water-glass and sulphate of iron; and Feuchtwanger quite recently recommend soluble glass and lime-water. In 1846, Vengat and Banner suggested the use of sulphate of copper with caustic baryta. Müller* claims to have obtained good results with phosphate of soda and chloride of barium; and Schweitzer† asserts that a combination of sulphate of soda and chloride of calcium has merits. But Payne's process, brought forward in 1841, has been more thoroughly tested than any other in this class. Payne tried experiments with various saline couples, but most noteworthily with a mixture of the sulphate of barium, or of calcium, with the sulphate of iron. Sulphate of iron and the sulphate of the earth were of course formed within the wood. The process, however, was costly and imperfect, and is now pretty much, if not altogether, abandoned. The same may be said of most other processes of this sort. The cost of a double operation necessarily amounts to something. I cite these methods here, not on account of any value in them, but for the sake of thoroughness.

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* The recipe for such a varnish may be found in the Scientific American, vol. 6.

† Dingler's Pol. Journal, 1866, vol. 181, p. 42.

‡ Dingler's Pol. Journal, 1868, vol. 189, p. 456.

All the preservative processes at present in vogue belong to our fourth and last class. They depend upon the injection of various antiseptics into the wood, and vary not only with regard to the antiseptic used, but also in the method of applying it. Let us first of all consider the method of application. Of course, the simplest plan is merely to soak the wood in the preservative liquid. Almost as simple is the device of boiling the wood in the antiseptic. At one time, Boucherie recommended absorption by the living tree. Deep cuts were made in the trunk near the roots, a sort of tank built around them, and the tank filled with the solution to be used. Sometimes the tree immediately after felling, was placed upright, with its lower end in a vat of liquid. In either case the preservative solution was drawn upward by the aspirative force of the tree, and penetrated even to the leaves. According to Hyett,* a poplar-tree, ninety feet high, placed thus with its lower end in a solution of acetate (pyrolignite) of iron of sp. gr. 1.056, absorbed about ten cubic feet of the solution in six days. In a variation of this method, the preservative was applied to the top of the recently cut log, being enclosed in a kind of rubber cup. Different sorts of wood were then found to be differently penetrated. Beech absorbed the antiseptic readily, poplar with less ease, and ash scarcely at all. Heartwood of Scotch fir, says Hyett, resisted permeation entirely. But all these methods of impregnation have been supplanted by the process which originated with Bréant, and which, adopted since by Bethell, Burnett, and Boucherie, has been made well nigh perfect. The wood to be preserved is enclosed in a strong iron cylinder, from which, by means of a powerful steam-pump, the air is exhausted. Then, under great pressure, the antiseptic fluid is allowed to flow in, and permeates the wood in the most complete manner. Of course, the cylinders vary in size, and different pressures are employed. The most convenient dimensions seem to be about 35 feet by 5, and the suitable pressure, about 125 pounds to the square inch.

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* Scientific American, Nov. 18th, 1871. Dingler's pol. Journal, vol. 202, p. 390.

† Dingler's pol. Journal, 1852, vol. 125, p. 121.

As for the antiseptics which have been applied by these various methods to the preservation of wood, the list, beginning with the recommendation of tar by Glauber, in 1657, is a very long one. Few of them, however, will require more than a bare mention. Coal tar, vegetable tar, creosote, petroleum, bitumen, and the so-called "pyrolignite of iron," have all been employed. Rosin has been used for the protection of wooden pavements in Cleveland. Solutions of rubber in naphtha or bisulphide of carbon have been recommended, but are of course too costly. Münzing, in 1840, suggested the use of the refuse liquor of the chlorine manufacture. Tannin, extracted from peat moss, gave unsatisfactory results. An arsenical solution, obtained from arsenical pyrites, was found to be dangerous to the workmen. Lime, and the alkalies, according to Parnell, really hasten the decay of wood. The other agents which have been proposed as preservative, are common salt, sulphate of soda, borax, saltpetre, bichromate of potash, sugar of lead, chloride of zinc, sulphate of zinc, verdigris, nitrate of copper, sulphate of copper, nitrate of iron, sulphate of iron, and corrosive sublimate. This list may not be absolutely complete, but it is nearly so. Some of these compounds have been found ineffective, and others, as for instance borax,* have not been sufficiently tested. We need consider only the following: common salt, corrosive sublimate, sulphate of iron, sulphate of copper, chloride of zinc, and the various agents used in the process commonly known as "creosoting."

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* See Parnell's Applied Chemistry.

The value of salt as an antiseptic is well known, but needs farther testing with reference to the preservation of wood. For this purpose it seems first to have been recommended by Volmeister, in 1798. It has beyond question some good effect, which is due partly, if not wholly, to its hygroscopic action. Examples of its efficacy may be found in many salt mines, whose timbers exhibit remarkable durability. Ships engaged in the salt trade remain sound, it is said, much longer than other vessels. But the best test of the preservative power of salt was made some time ago in Saxony.* Wood prepared with this substance was exposed side by side with some which was unprotected. The impregnated timber was perfectly sound at the end of thirteen years, while the other became unserviceable in two.

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* Recommended by Sigismund Beer. Scientific American, vol. 18.

At one time, corrosive sublimate was largely in vogue, but is at present little used on account of its high cost, and its deleterious effects upon workmen. As a preservative of wood, it seems first to have been recommended by Knowles and Davy in 1821. Kyan, whence the term "kyanizing," introduced it in 1832. In 1837 Letellier proposed to use it in connection with gelatin, and in 1842, Timperly had something to say concerning it. There has lately been, to some extent substituted for it a double chloride, $HgCl_2 + KCl$, procured by the decomposition of carnallite with oxide of mercury.† The corrosive sublimate is injected into the wood by steam power, the standard solution containing one pound of the salt to five gallons of water. Its value as a preservative agent is unquestionable. At Woolwich,‡ pieces of kyanized and unkyanized wood were buried together in a trench. This trench was filled with putrefying vegetable matter and fragments of wood affected with dry rot, the whole being covered with horse-dung. At the end of five years, the protected wood was found to be unchanged, while that which was unprepared was seriously affected in one year.

With regard to the sulphate of iron, statements disagree. It is praised on the one hand, and decried on the other. At all events it has had less thoroughly than some other more fashionable preservatives the tests of long experience. It was recommended by Strützlei in 1834, Earle in 1843, and

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* See paper in Dingler's Pol. Journal, 1871, vol. 202, p. 174.

† See Wagner's Chemical Technology.

‡ See Parnell's Applied Chemistry.

Apelt in 1853. Bohl, whose results will be considered in another connection, has employed it simultaneously with creosote. Its mode of action is rather complex. Injected into wood, it finds enclosed there a certain quantity of atmospheric air. The oxygen of this air is soon absorbed by the sulphate of iron, basic sulphate and some oxide of iron resulting from the change. On one side it is said that this action is beneficial. The fibre of the wood becomes coated with mineral matter, in fact, thoroughly mineralized, and is so protected from decay. In opposition, it is urged that the wood is weakened by this reaction, and that it is far less completely protected from decay than by some other more familiar processes.

The sulphate of copper, blue vitriol, must pass for one of the very best of the preservatives of wood. Its merits have been tested quite thoroughly, and some occasional failures in its action have been satisfactorily explained. Boucherie, who made experiments with a number of antiseptics, after getting poor results with salts of lead and iron, finally settled upon this agent as the best of all, and time has in many respects justified his decision. At first Boucherie impregnated the wood by the process of suction, which we have already considered, but finally he adopted the cylinder of Bréant. Unfortunately, however, the sulphate of copper is not applicable to wood under all circumstances. Baist* has shown that it fully protects only green wood containing much sap, and Boucherie, jr., somewhat corroborates this statement. Kirschneger†, also, claims that freshly cut wood is best for treatment with this preservative. This may perhaps enable us to explain the failure cited by Dalpiaz‡, who says that on the Paris and Rouen railroad, the timbers of a bridge which had been prepared with sulphate of copper decayed with unusual rapidity. Either the wood was in an improper condition when treated with the sulphate, or else the impregnation was not carried out conscientiously. One other point remains to be noticed. According to König,* resinous woods retain this antiseptic better than those which are non-resinous. From the latter the sulphate may be partly, at least, washed out, while in the former it seems to be fixed by the resin, probably in the form of some basic compound. It is worth while to remember, in this connection, that resinous woods naturally decay more slowly than other kinds. The resin itself is, to some extent, a preservative.

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* Dingler's Pol. Journal, 1861, vol. 162, p. 397.

† Dingler's Pol. Journal, 1851, vol. 122, p. 223.

‡ Dingler's Pol. Journal, 1851, vol. 120, p. 140.

The testimonials to the efficacy of sulphate of copper in preserving wood are quite numerous. In some of the German mines it has been found to give even better results than the chloride of zinc.† But on certain German railways, where it had been employed for the protection of sleepers, it was found to attack the iron. On the other hand it is said, that if the sleepers be thoroughly dried after impregnation, no such objectionable result will follow. In 1855, the jury of the French Exposition put forth an extremely favorable report concerning Boucherie's process, asserting not only its value, but also its superior cheapness over the plan of creosoting.‡ In 1846, about eighty thousand sleepers saturated with the sulphate of copper, together with some which were unprotected, were laid down on the Northern railway of France. In 1855 that is, nine years afterward, the prepared sleepers were as good as ever, the others having long been decayed and replaced by new ones. For preserving telegraph posts, the sulphate of copper has been similarly effective. The saving to French lines alone, up to 1855, was estimated at two and a-half millions of francs.§ Examples of this sort could easily be multiplied, but one more will suffice. In 1868, Boucherie, jr.,* exhibited to the French Academy specimens of wood which had been prepared according to his father's process, and exposed since 1847. These specimens were as sound, as elastic, and as strong as when new, and readily yielded the reaction of the copper they still contained. There was a test of twenty-one years' standing.

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* Scientific American, vol. 5. Dingler's Pol. Journal, 1861, vol. 160, p. 48.

† Dingler's Pol. Journal, 1871, vol. 202, p. 174.

‡ Journal Franklin Institute, 1856, vol. 32, p. 1.

§ Comptes Rendus, 1868, vol. 67, p. 713.

In England and America the chloride of zinc has probably been used much more largely than any other metallic salt for the preservation of wood. Having been introduced by Burnett in 1838, its application to wood is known as "Burnettizing," and the wood thus prepared as "Burnettized." The solution commonly employed contains one pound of the salt to ten gallons of water, and is injected by steam pressure in a cylinder like that of Bréant. The same limitations which apply to the sulphate of copper seem also to hold good of the chloride of zinc, the latter compound having the advantage of cheapness, and being nearly, if not quite as efficient a preservative. Burnettized wood was found to stand the Woolwich test as well as that which had been kyanized. In Germany the chloride has been applied successfully to railway sleepers, bridge timbers, and telegraph posts, and also to the wood-work in some of the Hartz mines. Furthermore, it has been used for the protection of wooden pavements. Mr. Bastable, of the Metropolitan Wood Paving Company,† says that he has had many thousand square yards of the paving Burnettized. This paving, prepared in advance of demand, has been stored for considerable lengths of time without showing the faintest signs of decay. But the paper which is the source of my information upon this point says nothing about the wearing of the pavement after it has been actually laid down.

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* Comptes Rendus, 168, vol. 67, p. 713.

† See paper in Mechanics' Magazine, 1870, vol. 24, p. 137.

One more preservative method remains to claim our attention, namely, that of creosoting. Bettrell, in 1838, using a vacuum cylinder, injected into wood a preparation of coal-tar oil known commercially as "*gallotin.*" Since that time, peat and brown coal creosote, paraffine, pyroligneous acid, and the so-called "pyrolignite of iron," have been applied in the same way. The best of all the substances of this class, however, is the heavy oil or "dead oil" of coal-tar. That portion is chosen which boils in the vicinity of 180° C., and depends for its efficacy to a great extent upon the carbolic acid which it contains. This carbolic acid coagulates the vegetable albumen, while the bituminous oils completely penetrate the capillaries of the wood, cover the fibres with an impervious coating, and protect them entirely from the action of water and air. Bohl* finds that the poorer the liquid is in oily matter the more readily it penetrates the wood. Since much of the creosote is easily washed out, he subsequently treats the wood with sulphate of iron, in order to fix the preservative. Protoxide of iron is precipitated, which is gradually converted into hydrated sesquioxide at the cost of such atmospheric oxygen and moisture as may have been retained in the wood. There are two main objections to the plan of creosoting timber. First, It is applicable only to winter-cut hard woods. In this respect it is just the reverse of the sulphate of copper process. The latter protects green but not seasoned wood, the former preserves seasoned but not green. (See the paper by Baist already cited.) The second objection is based upon the amount of the preservative to be used. Lumber, properly treated, absorbs about eight pounds of the coal-tar oil to the cubic foot.†

At present Bethell's process is largely used in England. For the preservation of railway sleepers it is said to be employed to the almost total exclusion of all other processes. On the Buckinghamshire R. R. ninety thousand Kyanized, Burnettized, and Payneized sleepers were laid down, with thirty thousand which had been creosoted, and the latter proved the most durable.* In the mines of Prussian Saxony, Upper Silesia, Thuringia, and Saarbruck, coal-tar for the protection of timber, is preferred to the chloride of zinc.† And in an experiment by Price, at Gloucester, England, when unprepared wood decayed in a year, Kyanized wood lasted for seven, and then rotted, while creosoted specimens were as good at the end of twelve years as at first.‡ As a general process, Bettrell's seems to be the best of all.

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* Dingler's Pol. Journal, 1857, vol. 144, p. 448.

† Scientific American, 1860, vol. 3, p. 186.

To sum up, with especial reference to wooden pavements. We are to decide upon a process which is sufficiently effective, suitably cheap, and applicable to the particular qualities of wood at our disposal. As a matter of economy, if for no other reason, pine wood is commonly used, and that without having been seasoned. Coal-tar oil, then, is barred out from our consideration, on account of its being suitable only for winter-cut hard woods. Moreover, it is too costly. Corrosive sublimate is both expensive and dangerous. Sulphate of iron has not been enough tested. We have then to decide between common salt, chloride of zinc, and sulphate of copper. Of these, probably the sulphate is the most effective, the chloride second in order, and the salt last. With regard to expense, they would probably stand in the same order, the copper solution being the most costly. Taking all things into account, then, I am inclined to give preference to the process of Burnettizing. It is cheap, reliable, effective enough for our purposes, and applicable to the kinds and conditions of wood we must use. The sulphate of copper cannot be much superior to the chloride of zinc, and costs more. The common salt, though cheaper, has not been sufficiently tested. Possibly, however, greater economy might be secured, without loss of efficiency, by mingling with the chloride of zinc some proportion of common salt. Suppose the zinc compound were to be dissolved in sea-water, in smaller quantity than is generally used. The more expensive material would be economized, cheapness would be gained, and the mixture would be very likely to have all the preservative power needed for the few years which a wooden pavement is likely to last.

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* Scientific American, 1860, vol. 3, p. 186.

† Engineering, 1872, vol. 13, p. 30.

‡ Dingler's Pol. Journal, 1852, vol. 123, p. 146.

I subjoin a list of a few of the more important among the papers bearing upon the preservation of wood. Many other papers may easily be found by working over the files of the "Artisan," "Van Nostrand's Magazine," "The Engineer," "Engineering," "Journal of Gas Lighting," "Revue Universelle des Mines," "Annales des Mines." See "Moniteur Industriel," &c. See also good articles upon the subject in Wagner's "Chemical Technology," Parnell's "Applied Chemistry," and Payen's work upon Industrial Chemistry. The Annual Report of the Smithsonian Institution for 1864, page 196, contains another full paper upon the subject.

Chemical News, 1869, v. 19, 148. P. M. Moir. "On the preservation of timber." Also Jahresbericht, v. 22, 1142.

Comptes Rendus, 1868, v. 67, 713. Maurice Boucherie. "Observations relatives à la conservation des bois." Also in Dingler's Pol. Journal, v. 191, 330, and Jahresbericht, v. 21, 983.

Mechanics' Magazine, 1863, v. 9, 340. "Preserving Wood with Pyroligneous Acid."

Mech. Mag., 1866, v. 16, 238. "On the Preservation of Wood by Carbonization." (Account of De Lapparent's process.)

Mech. Mag., 1870, v. 24, 137. "On the Preservation of Timber." (A general paper.)

Journal Franklin Institute, 1848, v. 16, 45. "List of the Different Processes adopted for the Preservation of Wood, from the year 1657 to 1846; prepared by M. J. A. Stoeckhardt."

Journ. Frank. Inst., 1856, v. 32, 1 and 408. "Dr. Boucherie's Patent Process of Preserving Wood from Decay." (Report of jury of French Exposition).

Journ. Frank. Inst., 1866, v. 52, 217 and 289. H. W. Lewis. "Preservation of Wood in Damp and Wet Situations." (A general paper.)

Bruxelles Acad. Sci. Bull., 1863, v. 15, 424. Rottier. "Recherches sur la conservation du bois, au moyen de l'huile lourde de goudron de houille, dite huile créosotée."

Scientific American, 1860, v. 3, 386. "Creosoting Railroad Timber."

Sci. American, 1865, v. 13, 407. "Preserving Timber."

" " 1868, v. 18, 145. "Process for Preserving Wood." S. Beer's.

Sci. American, 1868, v. 19, 213. T. W. Heinemann. "Improved Method of Preserving Wood."

Sci. American, 1869, v. 20, 3. Letter from Feuchtwanger.

Papers may be found in abstracts in the "Jahresbericht," as follows:—

V. 1, 1128, Payne's process; v. 8, 907, Durlach and Schneider.

V. 10, 647, Vohl on coal-tar oil; v. 17, 810, Melseus, etc.

The following papers are all in Dingler's Polytechnisches Journal: —

V. 100, 244. 1846. Note on Ransome's process.

V. 101, 153. 1846. "Ueber die Conservirung des Holzes für Eisen bahnschwellenu. s. w., nach Paynes' Verfahien." Same vol., p. 156, note on Venzat and Banner's method.

V. 104, 274. 1847. "Verfahien das Holz für Eisenbahnschwellen u. s. w. zu conserviren." (Paynes' patent.)

V. 108, 373. 1848. Hutin and Boutigny. "Ueber das

Conserviren des Bauholzes und besonders der Eisenbahnschwellen."

V. 109, 135. 1848. v. Gemini. "Schutzmittel gegen das Verderben des Holzes aus natürlichen Urfachen, insbesonderes druch Faulniss und Insectenfrass."

V. 120, 140. 1851. Dalpiaz. "Ueber das Conserviren das Holzes."

V. 122, 223. 1851. Kirschweger. "Ueber das Präpariren der Holzer, besonders der Bahnschwellen, zum Schutz gegen Fäulniss."

V. 123, 146. 1852. J. E. Clift. "Ueber das Conserviren des Bauholzes druch Kreosot."

V. 125, 121. 1852. Schweitzer. "Ueber Conservirung des Holz gegen Fäulniss."

V. 128, 392. 1853. "Die Conservirung des Holzes nach der in Königreich Sachsen patentute Methode des Dr. Apelt."

V. 130, 131. 1853. Lüdersdorff. "Das Conserviren des Bauholzes."

V. 144, 448. 1856. H. Bohl. "Ueber das Conserviren des Holzes vermittelat sogenannten Kreosot (Steinkohlentheeröls), und über die Anwendung des reines Kreosots und der Karbolsäure, wie solche bei der Photogen fabrication gewonnen werden, zu demselben Zwecke."

V. 160, 48. 1861. König. "Ueber die chemischen Vongänge, welche beim Imprägniren des Holzes mit Kupfenitriol stattfinden." See also Scientific American, v. 5, 197; and Jahresberichte, v. 14, 932.

V. 161, 237. 1861. H. Bohl. "Ueber das Conserviren der Nutzhölzer (Eisen bahnschwellen, Telegraphenstangen, und Schiffsbanholz), sowie das Imprägniren des Segeltuchs und der Schiffstane vermittelat Kreosot-Nations."

V. 162, 397. 1861. L. Baist. "Neue Erfahungen über das Conserviren von Holz mittelst Kupfenitriol und Theer."

V. 163, 306. 1862. C. Weltz. "Wie ist die Beobachtung zü erklaren, dass mit Kupfenitriol imprägnirtes Holz der Fäulniss lunger widersteht, als nicht imprägnirtes?"

V. 167, 312. 1863. F. Liesching. "Ueber die Behandlung des Nutzholzes zum Zwecke besserer Conservirung."

V. 181, 42. 1866. "Ueber das oberflächliche Verkohlem des Holzes (insbesondere der Telegraphenstangen) nach dem Verfahren von de Lapparent."

V. 189, 456. 1868. "Ueber Hugon's Apparate zur Conservirung des Holzes durch Ankohlen mittelst einer Löthrohflamme und zum Zertrennen harter Felsarten; Bericht von Payen."

V. 189, 184. 1868. "Ueber Beer's Verfahren zum Conserviren von Holz." See also Scientific American, v. 18, 145.

V. 202, 174. 1871. "Ueber Imprägnirung des Grubenholzes."

V. 202, 390. 1871. Armand Müller. "Ueber Barium phosphat zum Conserviren von Holz." Also Scientific American, v. 25, 328.

Besides the above-named papers in Dingler's Journal, other papers and various notes may be found in v. 79, 467; v. 80, pp. 192, 194, and 196; v. 84, 74; v. 85, 396; v. 86, pp. 434 and 439; v. 87, 397; v. 88, pp. 76 and 319; v. 91, 363; v. 93, 66; v. 94, 443; v. 97, pp. 80 and 423; v. 99, 56; v. 161, 464; v. 178, 416.

City Document. — *No.* 101.

CITY OF BOSTON.

AUDITOR'S MONTHLY EXHIBIT.

AUGUST 6, 1873.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1873-74.

MONTHLY EXHIBIT.

Office of the Auditor of Accounts,
City Hall, August 6, 1873.

To the Honorable City Council:

Gentlemen, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1873–74, as shown in the books in his office, August 1, 1873, including the August draft, being four months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,
Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Advertising	$6,000 00	$876 34	$5,123 66
Annuities	512 00	170 00	342 00
Armories	22,000 00	4,932 98	17,067 02
Board of Health	86,274 00	24,892 44	61,381 56
Boston Harbor	10,000 00	1,356 56	8,643 44
Bridges	*32,000 00	13,154 83	18,845 17
Cedar Grove Cemetery Add Revenue rec'd, $5,457 95	3,000 00	6,706 09	1,751 86
Cemeteries	15,700 00	4.372 18	11,327 82
Charles River and Warren Bridges	7,000 00	1,607 07	5,392 93
Chestnut Hill Driveway	5,000 00	3,783 12	1,216 88
City Hospital	110,000 00	40,910 45	69,089 55
Common, Public Squares, etc.	80,000 00	51,807 24	28,192 76
Contingent Funds, viz.:			
Joint Com'i'tees of the City Council	4,000 00	516 70	3,483 30
Mayor	1,500 00	. . . . .	1,500 00
Board of Aldermen	1,500 00	570 30	929 70
Common Council	3,000 00	1,272 00	1,728 00
County of Suffolk	325,000 00	102,911 76	222,088 24
East Boston Ferries	290,000 00	74,537 25	215,462 75
Engineer's Department	24,000 00	7,670 14	16,329 86
Fire Alarms and Bells and Clocks	50,940 00	13,886 56	37,053 44
Fire Department	551,316 00	249,804 15	301,511 85
Grammar School House, L street	†41,338 55	20,432 06	20,906 49
Health Department	383,550 00	132,038 93	251,511 07
Incidental Expenses	87,000 00	16,522 60	70,477 40
Inspection of Buildings	16,800 00	7,275 80	9,524 20
Interest and Premium	1,695,000 00	383,642 91	1,311,357 09
Lamps	390,000 00	107,674 48	282,325 52
Markets	10,000 00	6,911 52	3,088 48
Militia Bounty	45,000 00	4,802 00	40,198 00
Mount Hope Cemetery Add Revenue rec'd, $15,329 26	15,000 00	17,263 92	13,065 34
Overseers of the Poor	73,400 00	16,667 29	56,732 71
Old Claims	1,500 00	428 95	1,071 05
Paving, etc.	1,000,000 00	398,994 52	601,005 48
Police	700,000 00	223,268 05	476,731 95
Printing and Stationery	35,000 00	13,909 81	21,090 19
Public Baths	40,000 00	21,756 76	18,243 24
Public Buildings	92,000 00	34,649 76	57,350 24
Public Institutions, viz.:			
House of Industry	180,000 00	53,084 12	126,915 88
House of Correction	90,500 00	37,459 58	53,040 42
Lunatic Hospital	60,000 00	17,884 79	42,115 21
Pauper Expenses	31,500 00	9,233 18	22,266 82
Steamboat "Henry Morrison"	16,000 00	9,311 84	6,688 16
Office Expenses	8,000 00	2,370 80	5,629 20
Public Lands	6,000 00	978 45	5,021 55
Public Library	‡115,197 28	57,679 10	57,518 18
Quarantine Department	19,250 00	7,903 77	11,346 23
Registration of Voters and Election Expenses	20,000 00	235 00	19,765 00
Carried forward	$6,800,777 83	$2,208,118 15	$4,613,446 89

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* $4,000 of this amount brought from last year.
† $26,338 55 of this amount brought from last year.
‡ $25,197 28 of this amount brought from last year.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Brought forward	$6,800,777 83	$2,208,118 15	$4,613,446 89
Reserved Fund	300,000 00	48,100 00	251,900 00
Salaries	166,000 00	56,416 35	109,583 65
Schools and School-houses, viz.:			
School Instructors	1,024,875 00	316,504 03	708,370 97
School expenses, School Committee	86,750 00	33,997 43	52,752 57
Salaries officers, School Committee	24,500 00	8,057 50	16,442 50
School-houses, Public Buildings	255,000 00	45,232 53	209,767 47
Sealers of Weights and Measures .	7,000 00	2,416 63	4,583 37
Sewers	200,000 00	101,221 21	98,778 79
Sinking Fund Commissioners .	2,800 00	675 00	2,125 00
State Tax	736,480 00	. . . . . .	736,480 00
Surveyor's Department . . .	40,000 00	12,510 50	27,489 50
Water Works	336,500 00	134,878 31	201,621 69
Water Works, Interest and Premium	653,000 00	63,619 99	589,380 01
West Boston and Cragie's Bridges	*88,832 23	4,596 54	84,235 69
Widening Streets	300,000 00	119,231 55	180,768 45
		$3,155,575 72	$7,887,726 55
Total Appropriations, $10,932,147 00			
Balances from 1872–3, 90,368 06	$11,022,515 06		
Add Revenue,	20,787 21		
	$11,043,302 27		

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* $34,832 23 of this amount brought from last year.

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General . . .	$11,043,302 27	$3,155,575 72	$7,887,726 55
Special . . .	8,998,372 21	3,011,410 95	5,986,961 26
	$20,041,674 48	$6,166,986 67	$13,874,687 81

SPECIAL APPROPRIATIONS.

[*Under this head, the appropriations are the balances brought from the last financial year, and appropriations made the present financial year.*]

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Addition to Engine House No. 16, (reserved fund)	$18.000 00	$428 32	$17,571 68
Additional Supply of Water (transfer and loans)	546,418 36	8,229 42	538.188 94
Appleton Street Extension (loan)	2,938 10	......	2,938 10
Atlantic Avenue (loans)	203.516 22	72,022 04	131,494 18
Broadway Extension (loans)	80.680 21	......	80.680 21
Burnt District (loans)	3,892.516 28	1,546 290 70	2,346,225 58
Canton Street Grading (loan)	33.225 20	......	33,225 20
Chelsea Street Bridge (loan)	23,000 00	303 25	22.696 75
Church Street District (loans)	21,415 32	21,587 48	($172 16 to be provided for,)
Coal Sheds, Deer Island (appropriation)	15,000 00	10.643 04	4.356 96
Columbus Avenue Extension (loans)	362,750 00	325,000 00	37,750 00
Devonshire Street Extension (loan)	113,544 00	63,864 67	49,679 33
Engine and Hook and Ladder House Ward 5 (loan)	50,000 00	......	50.000 00
Engine House No. 12 (loans)	19 687 51	10,004 80	9.682 71
Engine House, Ward 14 (transfer and loan)	22.898 95	9,147 70	13,751 25
Fort Hill Improvement (loans)	116.417 77	7.051 79	109,365 98
Grading Madison Square (transfers)	3.015 96	3,015 96	......
Grammar School House, Atherton District (loan)	22,861 10	13,006 57	9.854 53
Grammar School House, Dudley District (loan)	110,000 00	1,599 30	108.400 70
Grammar School House Ward 15 (loan)	105,000 00	......	105.000 00
Harrison Avenue Extension (loan)	58.970 91	12.860 44	46,110 47
Highland Street Stable (loan)	85,000 00	2,011 88	82.988 12
Home for Poor, Deer Island (transfer)	225,000 00	......	225,000 00
Hook and Ladder House No. 4, (reserved fund)	12,000 00	11,391 00	609 00
Hose House, Longwood (loan)	28,000 00	......	28,000 00
Hose House, South Boston (transfer)	7,182 11	7,146 28	35 83
Mather School House, Ward 16 (loan)	46,784 16	29,336 10	17.448 06
Memorial Monument, Boston Common (transfer)	75.000 00	......	75,000 00
New Lunatic Hospital (loan and appropriation)	103,655 62	......	103,655 62
Parker Hill Reservoir (loan)	161.000 00	370 25	160,629 75
Police Station House No. 11 (transfer)	7,500 00	7,500 00	......
Police Station House, South Boston (loan)	45.000 00	......	45,000 00
Primary School Houses, East Boston	80,000 00	1,934 44	78.065 56
Primary School House Lot, Ward 14 (reserved fund)	10,000 00	......	10,000 00
Primary School House, Ward 9 (loan)	60,000 00	59,080 00	920 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	......	10,000 00
Small-pox Hospital (loan)	37,512 46	1,524 50	35,987 96
Soldiers' Relief (revenue)	151,115 48	20.864 77	130.250 71
South Market Street Extension (loan and transfer)	31,915 53	2,730 55	29,184 98
Suffolk Street District (loans)	326,933 79	285,848 53	41,085 26
Ticknor Bequest (transfer)	2,060 51	......	2.060 51
Washington Street Extension (loan)	1,025.328 00	420,119 00	605.209 00
Water Street Grade Damages (transfer)	15,546 17	......	15,546 17
Water Works Wards 13, 14, 15 and 16 (loan)	115,000 00	39,829 94	75,170 06
Widening and Grading Dudley and other Streets (loan)	10,823 50	2,511 00	8,312 50
Widening Eliot Street (loan and transfer)	13.458 99	......	13.458 99
Widening Federal Street (loans)	1,103 03	......	1,103 03
Widening Federal Street Bridge (loan and transfer)	9.287 76	8,745 00	542 76
Widening Hanover Street (loans)	41,127 92	......	41,127 92
Widening Hanover Street, No. 2 (loans)	62,146 81	......	62,146 81
Widening Kingston Street (loan)	59.535 81	......	59,535 81
Widening Kneeland Street (loan)	4,564 67	77 48	4,487 19
Widening Warren Street (loan)	62,934 00	5,334 75	57,599 25
Widening Washington and Essex Streets (loan)	250,000 00	......	250,000 00
	$8,998,372 21	$3,011,410 95	$5,987,133 42
		Less to be provided for	172 16
			$5,986,961 26

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1873.

Total Appropriations and Expenditures for Each.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the August draft.

Object of Appropriations.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans)	$610,000 00	$71,811 06	$538,188 94
Appleton Street Extension (loan)	100,000 00	97,061 90	2,938 10
Atlantic Avenue (loans) . .	1,600,000 00	1,468,505 82	131,494 18
Broadway Extension (loans) .	1,000,000 00	919,319 79	80,680 21
Burnt District (loan) . . .	5,000,000 00	2,653,774 42	2,346,225 58
Canton Street Grading (loan) .	150,000 00	116,774 80	33,225 20
Church Street District (loans) .	1,175,000 00	1,175,172 16	($172.16 to be prov'd for.)
Columbus Avenue Extension (l'ns)	515,000 00	477,250 00	37,750 00
Devonshire Street Extension (loan)	510,000 00	460,320 67	49,679 33
Engine House No. 12 (loans) .	31,000 00	21,317 29	9,682 71
Engine House W'd 14 (tran. & l'n)	30,000 00	16,248 75	13,751 25
Fort Hill Improvement (loans) .	1,575,000 00	1,465,634 02	109,365 98
Grading Madison Square (transfers)	12,158 49	12,158 49	. . . .
Grammar School House Atherton District (loan)	50,000 00	40,145 47	9,854 53
Grammar School House L Street (loan and appropriation) . .	105,000 00	84,093 51	20,906 49
Harrison Avenue Extension (loan)	220,000 00	173,889 53	46,110 47
Hose House, So. Boston (transfer)	23,000 00	22,964 17	35 83
Mather School House, W'd. 16 (loan)	65,000 00	47,551 94	17,448 06
New Lunatic Hospital (loan and appropriation)	148,000 00	44,344 38	103,655 62
Oliver Street , . . .	187,114 05	352,895 17	($165,781.12 advanced by Treasurer.)
South Market Street Extension (loan and transfer)	333,000 00	303,815 02	29,184 98
Suffolk Street District (loans) .	2,381,248 96	2,340,163 70	41,085 26
Washington St. Extension (loan)	1,500,000 00	894,791 00	605,209 00
Water Street Grade Damages (tr'n)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley and other Streets (loans) . .	180,000 00	171,687 50	8,312 50
Widening Eliot Street (l'n and tr'n)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Federal St. Bridge (loan and transfer)	90,584 25	90,041 49	542 76
Widening Hanover Street (loans)	725,000 00	683,872 08	41,127 92
Widening Hanover St., No. 2 (l'ns)	820,000 00	757,853 19	62,146 81
Widening Kingston Street (loan)	225,000 00	165,464 19	59,535 81
Widening Kneeland Street (loan)	150,000 00	145,512 81	4,487 19
Widening Warren Street (loan)	115,000 00	57,400 75	57,599 25
	$20,441,105 75	$16,116,726 88	$4,490,332 15
Advanced by Treasurer . .	165,781 12	Less to be provided for	172 16
	$20,606,886 87		$4,490,159 99

City Document.—No. 102.

CITY OF BOSTON.

FIRST SEMI-ANNUAL REPORT

OF THE

Inspection of Prisons and Houses of Detention,

IN

SUFFOLK COUNTY

FOR THE YEAR 1873.

CITY OF BOSTON.

In Board of Aldermen, August 25, 1873.

The Special Committee of the Board of Aldermen, who were appointed to inspect the prisons and houses of detention within the County of Suffolk, and make the examinations and reports required by the Statutes of the Commonwealth, beg leave to submit the following report: —

HOUSE OF CORRECTION.

The committee visited the House of Correction at South Boston on the 17th of June, 1873. At the previous inspection, December 1st, 1872, there were in the institution: —

Males	331	
Females	74	
		405

The number of prisoners committed from Jan. 1st to June 17th, 1873, inclusive, was: —

Males	369	
Females	77	
		446

Discharged: —

Males	253	
Females	58	
		311

Remaining June 17th, 1873: —

Males	447	
Females	93	
		540

The commitments since the last inspection have been as follows, viz.: —

Assault and battery	75
Drunkenness	46
Larceny in a building	51
Obtaining property by false pretences	4
Larceny	88
Wantonly breaking window-glass	1
Breaking and entering a building with intent to steal therein	28
Unlawfully keeping for sale intoxicating liquors	14
Larceny from the person	12
Robbery	11
Idle and disorderly persons	9
Receiving stolen goods	8
Adultery	8
Lewd and lascivious cohabitation	7
Assault with a dangerous weapon	7
Common night-walker	7
Assault on an officer	7
Disturbing the peace	6
Fornication	6
Assault	5
Being a vagrant	5
Embezzlement	4
Larceny in a vessel	4
Maintaining a liquor nuisance	3
Common drunkard	3
Maliciously driving a horse without the consent of the owner thereof	3

Assault with a pistol	3
Attempt to commit larceny from the person	2
Threats	2
Keeping a house of ill-fame	2
Forgery	2
Simple larceny	2
Maliciously breaking personal property	2
Keeping a disorderly and ill-governed house	1
Assault with intent to commit robbery	1
Cruelty to a horse	1
Assault with a knife	1
Manslaughter	1
Larceny in a dwelling-house	1
Assault with a hatchet	1
Cheating with intent to defraud	1
Assuming to be an officer of the peace	1
Total	446

The male prisoners have been employed in making brushes and shoes; running sewing-machines; and as tailors, cobblers, bakers, carpenters, sweeps, whitewashers, firemen, tinsmiths, barbers, hostlers, blacksmiths, runners, nurses, and lumpers in the yard and gardens.

The female prisoners have been employed in making contract clothing, prison clothing, washing and ironing, sweeping, nursing, knitting, mending prison clothes, and as domestics.

The following persons have been pardoned by the Governor: —

Mary Sullivan,	pardoned,	January	15,	1873.
John McKenney,	"	"	29,	"
Adam Eary,	"	March	4,	"
Catharine O'Malley,	"	"	26,	"
Charles Wood,	"	June	6,	"

The following persons have been discharged by order of the Municipal Court: —

Walter Warrent, . .	discharged,	January	11,	1873.
James Duncan, . .	"	"	16,	"
Robert Alders, . .	"	"	18,	"
Augustus Bailey, . .	"	"	18,	"
John Donnelly, . .	"	"	22,	"
Edward Sullivan, . .	"	Feb'y.	5,	"
Martin T. Green, . .	"	"	13,	"
Charles O'Brien, . .	"	"	25,	"
John Doherty, . .	"	March	5,	"
John Sullivan, . .	"	"	15,	"
Godfrey C. Noble, . .	"	"	17,	"
Michael Haley, . .	"	"	20,	"
Charles McCarty, . .	"	April	4,	"
Isaac Washington, . .	"	"	8,	"
Nellie Early, . .	"	"	24,	"
John O'Brien, . .	"	"	28,	"
James Millen, . .	"	"	28,	"
Thomas Hill, . .	"	"	30,	"
James Coughlin, . .	"	May	10,	"
Henry Harrington, . .	"	"	15,	"

The following persons have paid fine and costs and been discharged: —

John W. Day, . . .	paid,	January	9,	1873.
Austin McDonald, . . .	"	"	19,	"
Frank Mayhew, . . .	"	Feb'y.	19,	"
Patrick O'Neil, . . .	"	"	19,	"
Anson S. Haskell, . . .	"	March	31,	"
John G. Weiler, . . .	"	"	31,	"
Bridget Riley, . . .	"	April	9,	"
Patrick Brennan, . . .	"	"	21,	"
Michael Coyne, . . .	"	"	31,	"

Catharine Gray, ...	paid,	May 8,	1873.
Edward Farley, ...	"	" 21,	"
Frances O'Rouke, . . .	"	" 24,	"
Frank Chadwick, . . .	"	" 28,	"
Robert D. Dawson, . . .	"	" 28,	"
Albert Bancroft, ...	"	June 11,	"

The following-named persons have died: —

John Fannon, . . .	died,	January	28,	1873.
John Keating, . . .	"	Feb'y.	24,	"
Bridget Hannigan, . . .	"	Mar.	27,	"
Charles Kimball, . . .	"	April	1,	"
John Baker, ...	"	May	12,	"
James Tynan, . . .	"	"	13,	"

Transferred to State Lunatic Hospital for treatment: —

Henry B. Stickney,	transferred,	March 25,	1873.
Eliza Allen,	"	"	"

Two persons have escaped, namely: —

John McCloud,	escaped,	March 14,	1873.
John Knowles,	"	June 7,	"

Recapitulation.

Remaining as last report	405	
Committed from Jan. 1st, to June 17th 1873, inclusive	446	
		851
Pardoned by the Governor	5	
Paid fine and costs	15	
Died	6	
Transferred to Lunatic Hospital . . .	2	
Discharged by Municipal Court . . .	20	

Escaped	2	
Expiration of sentence	261	
		311
Remaining June 17th, 1873		540

The health of the prisoners has continued very good. The prison is kept clean. Only one prisoner occupies a cell at one time. Deprivation of bed and solitary confinement are the punishments. Good discipline is maintained. Since the inspection in December last, the number of inmates has increased 135; consequently there are more prisoners than there are cells to put them in. At present, 83 males are lodged in the prison attic, and 55 in the upper part of the brush-shop —an arrangement which is not not only dangerous but illegal.

LUNATIC ASYLUM.

The committee visited the Lunatic Hospital, at South Boston, on the 17th of June.

The number of patients in the Hospital, December 31, 1872, the date of former inspection, was: —

Males	105	
Females	95	
		200
Admitted since: —		
Males	2	
Females	4	
		6
Whole number under care, during the term		206
Discharged, during the term: —		
Recovered	3	
Improved	2	
Not improved	3	
Died	8	
		16

Remaining, June 17, 1873 : —

Males	100	
Females	90	
		190

Of the eight deaths, four were from consumption, two from disease of the heart, one from general paralysis, and one from softening of the brain. Names of those who have died: Joseph L. Gifford, Edward Moylan, Elizabeth F. Stuart, Sarah Myrick, Ann Ayrlin, Alexander P. Macomber, Catherine McCarty, and Edward Hall.

The health of the Hospital has been very good. No one has died, of whose recovery to mental health there was the slightest hope.

All the requirements of law have been carefully complied with, and the means at the command of the management have been employed to their fullest extent for the recovery and comfort of the patients.

THE COUNTY JAIL.

The committee visited the Suffolk County Jail on the 17th June.

The number of prisoners held therein at that time was	164
The number of prisoners December 31, 1872 (the date of the previous inspection), was . .	201
The number committed between those dates was	1,587

The general health of the prisoners during the present year has been good, no cases of sickness having occurred except from small-pox. During the prevalence of that disease, five persons who had it were committed to the jail. Two of the number were sent to Gallop's Island and died there; the other three were sent to Hospital No. 2, in Roxbury, and subsequently returned convalescent.

The sentence of death, for the crime of murder, was executed upon James McElhaney at the jail on the twenty-first day of March, 1873, by warrant of the Governor of Massachusetts.

The security of the jail has been improved by an additional iron door at the main entrance to the guard-room and by permanently closing eight basement windows.

At five o'clock A. M., on Sunday, March 9, last, the wooden cupola or bell-tower on the jail was discovered to be on fire, on the outside circle of the eastern clock face. An alarm was speedily given, and the fire was extinguished with very small damage. The cupola has since the fire been covered with iron, outside and inside, rendering it reasonably safe.

The yard of the jail has been paved with stone blocks in a very substantial manner; and some of the rooms in the house, and the offices in the jail building, have been thoroughly repaired and painted.

The jail is in good order and condition, and well ventilated.

HOUSE OF INDUSTRY.

The committee visited the House of Industry at Deer Island on the 4th of August. The previous inspection was made January 1st, 1873. The number of commitments during this interval was as follows: —

Drunkenness	3,256
Common drunkards	241
Larceny	139
Idle and disorderly	99
Assault and battery	89
Vagabonds	31
Common night-walkers	52
Maliciously breaking glass	22
Fornication	11

Common beggars	5
Maliciously destroying property	6
Disturbing the peace	7
Keeping house of ill-fame	1
Stubborn and disorderly	2
Lewdness	2
Malicious trespass	1
Keeping disorderly house	1
Total	3,965

The number discharged during the same time was as follows: —

Expiration of sentence	3,058
Paid fines and costs	661
Pardoned by Directors	37
Discharged by Court	35
Died	4
Total	3,795

Recapitulation.

Remaining as per last report, January 1, 1873	575
Committed from Jan. 1st, to August 4th, 1873, inclusive	3,965
Total	4,540
Discharged from Jan. 1st to Aug. 4th, 1873	3,795
Remaining Aug. 4th, 1873	745

Men 418; Women 327; Total 745.

The male prisoners have been employed as shoemakers, carpenters, painters, coopers, tailors, bakers; and in farming, taking care of prisons, barns, piggery, and various kinds of labor about the premises. The females have been employed at washing, ironing, mending, scrubbing, cooking, making contract and institution clothing, etc.

Solitary confinement is the mode of punishment. Each cell is occupied by a single prisoner.

The attention of the Government is called to the fact that both the male and the female prisons contain but two hundred cells each, making four hundred in all. At this date there are seven hundred and forty-five prisoners, — three hundred and forty-five more than there are cells in both prisons, who have to be lodged on prison platforms, and in dormitories.

Strict attention is paid to cleanliness in all departments. Good and wholesome food in sufficient quantity is provided.

HOUSE OF REFORMATION.

The committee visited the House of Reformation on the same day. The number of commitments since the date of the previous inspection (Jan. 1st) was as follows: —

Habitual truants	42
Juvenile vagabonds	44
Larceny	29
Breaking and entering	3
Stubbornness	4
Idle and disorderly	1
Common drunkard	1
Total	124

The number discharged by expiration of sentence was	87
By pardon of Directors on probation	28
Total	115

Remaining as by last report	299
Committed from Jan. 1st to Aug. 4th, 1873, inclusive	124
Total	423
Discharged from Jan. 1st to Aug. 4th, 1873, inclusive	115
Remaining Aug. 4th, 1873	308

Boys 279; Girls 29; Total, 308.

From the date of the last inspection till May 1st, all inmates of this department attended school. Since May 1st, some seventy-five of the larger boys have been employed on the farm and in various kinds of out-door labor.

The inmates are well and comfortably clothed and fed, and their health has been good.

The boys' department of this institution is overcrowded, in consequence of which no proper classification of the inmates can be made.

Respectfully submitted.

NEHEMIAH GIBSON,
HIRAM EMERY,
ALANSON BIGELOW,
Committee.

City Document. — *No.* 103.

CITY OF BOSTON.

REPORT

OF THE

COCHITUATE WATER BOARD

TO THE

CITY COUNCIL OF BOSTON,

FOR THE YEAR ENDING

APRIL 30, 1873.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, May 5, 1873.

Ordered, That the Cochituate Water Board be and hereby are authorized to submit their annual report in print; the expense thereof to be charged to the appropriation for Printing.

Passed in Common Council.

Came up for concurrence.

Read and concurred.

Approved by the Mayor May 6, 1873.

A true copy.

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

City Hall, Cochituate Water Board Office.
May, 1873.

To the City Council of the City of Boston:—

In accordance with the requirements of the City Ordinance, the Cochituate Water Board herewith submit their annual report for the year ending April 30th, 1873, together with the reports of the Clerk of the Board, the Superintendent of the Eastern and Western Divisions, Water Registrar, and City Engineer, to which they would refer the City Council for detailed statements of the progress and condition of the Water Works during the year.

An examination of these reports will show the works to be in a very satisfactory condition.

At the date of the last annual report, the Board were especially engaged in the construction of a temporary connection between Sudbury River and Lake Cochituate; the channel was completed in June, 1872, and on the 19th day of that month, the water from Sudbury River was let in, and (with sundry interruptions) continued to flow into Lake Cochituate until the 17th day of September, when the channel was closed, and has not since been used. The amount of water thus conveyed into Lake Cochituate cannot be accurately stated, but is computed by rough gauging to be 1,676,600,000 gallons; a sufficient quantity to supply the city for more that one hundred days.

After the completion of this temporary connection, the City Engineer engaged in making surveys and plans for the location and construction of a permanent conduit of great capacity to convey the water from our new source of supply (Sudbury River) to Chestnut Hill Reservoir — a distance of about sixteen miles.

His report upon this subject was made to this Board in January last, and duly transmitted to the City Council, and by them approved.

An appropriation of five hundred thousand dollars has been made for the commencement of the work. A force will at once be put into the field, and portions of the work got under contract at an early day.

To render the supply from Sudbury River the most efficient, it is necessary to build two or more storage reservoirs, of liberal dimensions, upon the river, and, by means of a conduit, divert the water into Farm Pond at Framingham, thence by a second conduit to Chestnut Hill Reservoir. To reach the reservoir, and by the most desirable route, will involve the construction of two or more tunnels through solid rocks. The distance to be tunnelled will probably amount to seven or eight thousand feet.

The size of the conduit will be eight and one-half feet diameter,— over two feet larger than the conduit which connects Lake Cochituate with Chestnut Hill.

It is estimated that this work, when complete, will cost nearly five million dollars, — a vast sum in itself considered; but the advantages to be derived from its expenditure can be appreciated in the fact that it will ensure the City of Boston an ample water supply for the next half century. The work will be pursued with energy, but much time (three years and perhaps more) will be required for its completion.

The *temporary* connection between Sudbury River and Lake Cochituate will be kept intact until the permanent works are constructed.

The present supply of water at the lake renders it probable that no demands will be made upon Sudbury River during the year 1873.

The average level of the water in the lake for the year ending January 1st, 1873, was $6\frac{91}{100}$ feet above the level of the bottom of the conduit; the average of the previous year was $6\frac{50}{100}$. The level of the water would have fallen far below the previous year except for the introduction of Sudbury River.

CONSUMPTION OF WATER.

The average daily consumption of water for the year ending Dec. 31, 1872, was 15,063,400 gallons; an increase of 1,117,900 per day, as compared with the previous year.

The rapid growth of the city in population and mechanical pursuits increases the demand for water, and the wisdom of securing an additional supply is daily made more apparent.

The largest consumption of water was in the month of November, averaging nearly *eighteen million* gallons daily. This large demand was materially increased by the great conflagration which occurred on the 9th and 10th days of November.

By the records in the office of the City Engineer, it appears that the quantity of water used, during the thirty-five hours of the fire, was sufficient to flood the entire area of the "burnt district" (estimated at 60 acres) to a depth of 10½ inches; and would cover the area occupied by the buildings burned, to a depth of nearly 14 inches.

The income from water rates has been $851,474.31, being an increase over the previous year of $63,222,26, and the estimated income for the year ending April 30, 1874, is $875,000.

The expenses have been as follows : —

For the current expenses		$253,963 58
Interest and premium on water debt		702,177 21
		$956,140 79
The Treasurer has credited the Water Works for the same year		$901,799 18
The balance shows an excess of expenditures over income		$54,341 61
Expended in Wards 13, 14, 15 and 16		107,044 10
" on New Water Pipe, East Boston		8,732 21
" " High-Service, South Boston		26,832 25
" " Add'l Water Supply	$61,278 83	
Less income	223 50	
		$61,055 33
		$258,005 50
Cost of the works May 1, 1872		9,602,950 74
Net cost to May 1, 1873		$9,860,956 24

EASTERN DIVISION.

This division comprises all the works lying east of the Brookline Reservoir, including the distributing pipes and reservoirs in the city, and is under the care of Mr. E. R. Jones.

During the year there has been laid ninety-four thousand and forty-six (94,046) feet of main pipe, equal to about eighteen miles; total length of main pipes laid from the commencement of the works to present time is two hundred and thirty-seven miles.

Connected with the mains are two thousand six hundred and fifty-eight fire hydrants, — an increase of two hundred and twenty-five during the year. Of the hydrants now in use eleven hundred and forty are of the Lowry pattern, and this pattern is now exclusively used, wherever new mains are laid or alterations made.

The hydrants are located as follows: —

Boston proper	1,105
South Boston	394
East Boston	236
Boston Highlands	561
Dorchester	320
Brookline	9
Charlestown	11
Chelsea	8
Deer Island	14
Total	2,658

The number of service pipes laid during the year is (2,195) two thousand one hundred and ninety-five, measuring three thousand two hundred sixty-six feet, or about twelve miles.

The work of connecting a portion of South Boston with the "high-service" system, and mentioned in our last report, has been completed, and is very satisfactory to the water-takers in that section of the city.

The connection between the Mystic (Charlestown) Water Works and Beacon Hill has been made by means of large-sized pipes, and, in case of any emergency or disablement of works in Boston, or Charlestown, great benefits would be derived.

The relaying of main lines through the "burnt district" has commenced, and will be continued as fast as new lines of streets are determined, and other circumstances permit.

In most cases the new mains will be of increased capacity, and all new hydrants will be of the Lowry pattern.

The City Engineer has been called upon to examine the present mains, by which the easterly section of the city is supplied, and his report indicates a need of greater capacity in the branch mains feeding that section. This subject will receive the early attention of the Board.

HIGH-SERVICE.

In our last report, allusion was made to the satisfaction which the more elevated portion of our city derived from this branch of the service, and that the day was not far distant when it would be necessary to increase our pumping facilities.

The demands upon this service have exceeded any expectations; the average amount pumped daily for the year 1872 was 633,499 gallons, — an increase of more than thirty per cent. over the previous year.

The best method for the increase of our facilities has been considered by the City Engineer, and his views submitted to the City Council through this Board, and may be found in City Document No. 38 of the current year.

His plans contemplate the erection of a reservoir on Parker's Hill (Boston Highlands), and application has been made to the Legislature for authority to take land necessary for its erection.

DISTRIBUTING RESERVOIRS.

The Beacon Hill Reservoir is only useful for the storage of a quantity of water for use in case of fire, or accident to the mains in its immediate vicinity; and the same is substantially the fact with the reservoirs at East and South Boston.

If a reservoir should be erected on Parker's Hill for the benefit of the high-service, there is no reason why the Beacon Hill Reservoir could not be abandoned with entire safety, as the establishment of a reservoir, at the point named, would command and amply protect the Beacon Hill District, both for fire and domestic purposes.

WESTERN DIVISION.

This division comprises the lake and all that portion of the work lying between the lake and the gate-house at the Brookline Reservoir, and is under the care of Mr. Albert Stanwood as Superintendent.

The new source of supply from Sudbury River has added greatly to the importance of this division, and will materially increase the duties of the Superintendent and others connected with the works.

The annual examination of the conduit (omitted last year on account of the low stage in the lake) was made on the 12th and 13th days of October last, and was found to be in good general condition; it appeared that some repairs were required, which have been made.

CHESTNUT HILL RESERVOIR.

This reservoir is in excellent condition, and one of the most valued features of the works. Its immense storage capacity, 731,472,429 gallons, affords ample protection to the city in case of accident to the conduit, and is at all times kept at such height as to answer all demands that are likely to be made upon it.

BROOKLINE RESERVOIR.

The land and buildings are in good order. This reservoir should be thoroughly cleaned out at an early day.

WATER REGISTRAR'S DEPARTMENT.

The number of water-takers now entered for the year 1873 is 40,688, — an increase of 1,972 over the previous year.

Number of cases in which the water has been turned off for non-payment of rates, during the year, is 933; of this number 751 have been turned on again, and 182 still remain off.

Meters still continue in use in quite a number of establishments, embracing hotels, railroads, stables, manufactories, saloons, and buildings occupied by several tenants.

Whole number of meters now in use, 955.

The number of the various kinds of water fixtures, on the premises of water-takers, January 1, 1873, was 159,654, — an increase of 13,868 during the year.

CHARLES H. ALLEN, *President*,
JOHN A. HAVEN,
ALEXANDER WADSWORTH,
EDWARD A. WHITE,
LEONARD R. CUTTER,
EDWARD P. WILBUR,
WILLIAM G. THATCHER.

REPORT OF THE CLERK.

OFFICE OF THE COCHITUATE WATER BOARD,
BOSTON, May 1, 1873.

CHARLES H. ALLEN, Esq.,
President of the Cochituate Water Board: —

SIR, — The following is a statement of the Expenditures and Receipts of this department for the year commencing May 1, 1872, and ending April 30, 1873: —

EXPENDITURES.

Carting	$810 00
Plumbing shop	62 50
Damage	3,232 54
Taxes	1,431 13
Upper yard	4,593 03
Main pipe	36,416 81
Service pipe	8,526 18
Rent of Eastern avenue wharf and salary of agent	3,222 33
Telegraph	1,457 11
Hydrants	4,453 37
Stopcocks	5,668 82
Tolls and ferriage	26 00
Lake	3,260 58
Proving yard, for stock, etc. . . .	2,373 06
Stable	4,628 80
Amount carried forward,	$80,162 26

Amount brought forward,	$80,162	26
Laying main pipes	375	08
" service "	90	00
Reservoir — East Boston	126	50
" Beacon Hill	578	47
" South Boston	197	75
" Brookline	3,002	08
" Chestnut Hill	14,612	31
Meters	5,594	00
Maintaining Meters	2,779	39
Repairing stopcocks	1,857	62
" main pipe	16,350	45
" service pipe	11,881	19
" streets	6,510	25
" hydrants	9,037	42
Travelling expenses	177	40
Fountains	1,585	36
Postage and expressage	29	48
Blacksmith shop, for stock, etc. . . .	189	41
Tools	3,134	55
Salaries (including clerks in Water Registrar's Department)	21,999	99
Inspectors	8,824	50
Off and on water	11,221	95
Printing (including Water Registrar's and Superintendent's)	1,275	42
Miscellaneous expenses	2,030	22
Stationery (including Water Registrar's and Superintendent's)	341	86
Wages — proving yard	6,912	50
" blacksmith's shop . . .	816	57
" laying main pipe. . . .	12,567	35
" " service pipe . . .	10,408	08
Amount carried forward,	$234,669	41

Amount brought forward,	$234,669 41
Wages — laying high-service	4,148 50
Aqueduct repairs	1,240 69
Advertising	46 23
Hydrant and stopcock boxes	3,117 61
High-service	4,646 44
Pumping works at Lake Cochituate	3,694 70
Chestnut Hill Driveway	4,891 19
Water to Deer Island	3,289 31
Wards 13, 14, 15, and 16	107,044 10
Additional supply of water	61,278 83
New water pipe, East Boston	8,732 21
High-service, South Boston	26,832 25
Total amount drawn for by the Board	$463,631 47

And which is charged as follows: —

To Water Works	$251,563 58	
" Chestnut Hill Driveway	4,891 19	
" Water to Deer Island	3,289 31	
" New water pipe, E. Boston	8,732 21	
" Wards 13, 14, 15, and 16	107,044 10	
" Additional supply of water	61,278 83	
" High-service, South Boston	26,832 25	
	$463,631 47	
Amount charged to Water Works		$455,450 97

RECEIPTS.

Received for hydrants and maintaining same for Fire Department	$29,652 00	
" " pasturage and rent of land	137 00	
Amounts carried forward,	$29,789 00	$455,450 97

Amounts brought forward,	$29,789 00	$455,450 97
Received for sale of old Tool House . . .	15 00	
" " sale of hay at C. H. Reservoir . .	50 00	
" " sale of grass at E. B. Reservoir . .	20 00	
" " sale of coal at lake, not used for pumping engines . .	100 00	
" " use of engine loaned E. Boston Improvement Co. . .	75 00	
" " sale of old junk, etc., at yard . . .	57 87	
" " rent of part of Eastern Ave. Wharf .	300 00	
" " sale of old mattresses, etc., at So. Framingham . .	223 50	
" " off and on water for repairs . .	1,990 00	
" " fines for waste .	379 00	
" " pipe laying, repairing, etc., etc., .	15,979 00	
		48,978 37
Net amount to Water Works,		$406,472 60

Which is credited to —

Additional supply of water,	$223 50	
Water Works, ...	48,754 87	
		48,978 37

Amount drawn for the Water Works, not including Chestnut Hill Driveway, Water to Deer Island, Wards 13, 14, 15, and 16, new water pipe to East Boston, High-Service, South Boston, or additional supply of water	$251,563 58

EXTENSION OF THE WORKS.

Main pipe	$36,416 81	
Wages laying main pipe .	12,567 35	
Laying main pipe, stock, etc.	375 08	
Service pipe . . .	18,526 18	
Wages laying service pipe .	10,408 08	
Laying service pipe . .	90 00	
		68,383 50

Amount of expenses from April 30, 1872, to May 1, 1873	$183,180 08

Expenditures and Receipts on Account of the Water Works, to May 1, 1873.

Amount drawn by Commissioners . .	$4,043,718 21
" " " Water Board, in 1850 .	366,163 89
" " " Cochituate Water Board, from January 1, 1851, to May 1, 1872 .	6,647,558 36
Amount drawn from April 30, 1872, to May 1, 1873, for Water Works . . .	455,450 97
Amount carried forward,	$11,512,891 43

Amount brought forward,		$11,512,891 43
Amount paid the City Treasurer by the Commissioners .	$47,648 38	
Amount paid by Water Board, 1850	8,153 52	
Amount paid by Cochituate Water Board to May 1, 1872	315,789 92	
Amount paid April 30, 1872, to May 1, 1873 . .	48,978 37	
		420,570 19
Net amount drawn from the Treasurer, by the Commissioners and Water Boards, for the Water Works		$11,092,321 24
Gross payments (including interest, premium, etc.) for account of the Water Works		21,472,585 44
Gross receipts		11,611,629 20
Net cost to the city, May 1, 1873 . .		$9,860,956 24

Respectfully submitted,

J. A. WIGGIN,

Clerk of the Cochituate Water Board.

COST OF THE WORKS TO MAY 1, 1873.

WESTERN DIVISION.

Amount paid Wm. H. Knight, for the lake			$100,000 00
" " " " " " factories, $50,000, less amount on account of the sale of land and machinery, and insurance at the time of the fire			20,818 22
Expense of raising the lake two feet, including damages			28,002 18
Cost of roads, bridges and swamps			38,332 48
Gate-house at the lake			29,907 12
Dam at the outlet of the lake			8,458 20
Dudley pond, lower dam, and making connections with the lake			18,982 23
New dams, and improvement at the lake			19,610 90
Total cost of lake dep't, *not including land*			$264,111 33
Land and land damages, less credit for land sold		$225,523 15	
Constructing brick conduit		817,717 73	
Brookline Reservoir,			
land	$58,418 92		
Construction	108,301 92		
Gate-house	33,356 37		
		200,077 21	
Compensating reservoirs, less amount received when sold		66,859 80	
Engineering expenses on the Western Division		69,900 31	
Miscellaneous expenses on the Western Division		112,715 58	
Am'ts carried forward,		$1,492,793 78	$264,111 33

Am'ts brought forward,	$1,492,793 78	$264,111 33
Payments on account of the "new supply of water"	63,581 64	
Chestnut Hill Reservoir, land construction	2,449,982 07	
		4,006,357 49
Total cost of Western Division		$4,270,468 82

EASTERN DIVISION.

Main and service pipes		$3,102,987 33
Beacon Hill Reservoir, land	$145,107 10	
Construction	368,426 11	
		513,533 21
South Boston Reservoir, land	55,103 23	
Construction	35,804 87	
		90,908 10
East Boston Reservoir, land	23,862 50	
Construction	46,328 59	
		70,191 09
Engineering expenses on the Eastern Division		31,403 02
Machine shop and pipe yards		99,463 97
Hydrants and stopcocks		123,298 59
Proving pipes		35,983 96
Meters		126,758 94
Miscellaneous expenses on the Eastern Division,		569,421 50
Payment on account of Wards 13, 14, and 15		700,983 03
Payment on account of Ward 16		375,000 00
Am't carried forward,		$5,839,932 74

Am't brought forward,	$5,839,932 74	
Payment on account of Wards 13, 14, 15, and 16 . .	299,999 14	
Payment on account of new main to East Boston . .	24,878 08	
Payment on account of new water pipe, East Boston .	20,999 43	
Payment on account of high-service, South Boston . .	26,832 25	
Total cost of Eastern Division . .		$6,212,641 64
Total cost of Eastern Division	$6,212,641 64	
" " " Western "	4,270,468 82	
Total cost of Eastern and Western Divisions		$10,483,110 46
Net cost after deducting income from all sources		$9,860,956 24

REPORT OF THE CITY ENGINEER.

Office of the City Engineer, City Hall,
Boston, May 1st, 1873.

Charles H. Allen, Esq.,
President of the Cochituate Water Board:—

Sir, — In compliance with the requirements of the ordinance on Engineer's Department, the following report, upon matters pertaining to water supply, is respectfully submitted : —

LAKE COCHITUATE.

The monthly average heights of the water surface of the lake, above the bottom of the conduit, will be found in the table on page 52.

On May 1st, 1872, the height was 5 feet 3½ inches ; on May 28th, it was 4 feet 10 inches ; and from that date it rose continuously till April 3d, of this year, when the lake was full and wasting largely at the outlet-dam, the waste-gate being open. On May 1st, the surface had been drawn down to 13 feet 1 inch above the conduit bottom.

At the beginning of last year there was no water in store, — in fact, at that time and until April 13 the conduit was supplied by means of pumps, — and as very little snow fell during the winter and the under-ground water-table had been very much lowered by the drought of the preceding season, great apprehension was felt that the Cochituate District alone would prove insufficient to maintain the supply to the city during the following summer.

Application to the Legislature was therefore made for an act authorizing the city to take water from a new source, and to build works for immediate relief.

An act was passed, early in April, granting the right to take water from the Sudbury River and to turn it into Lake Cochituate, and the work required for this purpose was at once begun.

In a report to your Board, made last May, a full description of this work (then in progress) was given. Its chief features are a wooden dam across the river, and a ditch from Farm Pond to Beaver Dam Brook, passing through swamp and meadow lands of a nature that requires the sides of the ditch to be sustained by planking and bracing. With the exception of a bridge over the outlet of Farm Pond, it is now finished. It is of a temporary character, intended, with proper attention and repairs, to last four or five years, or until a new conduit may be built connecting the river with Chestnut Hill Reservoir.

Water was first let into the ditch June 19th, and was run each night till June 25th, to draw down the level of the pond and permit the deepening of the mouth of the ditch. On June 25th, water from the river was turned into the pond, and from thence let into the lake, and the flow was continued uninterruptedly until August 7th, when it was stopped to finish the side planking of the ditch. August 16th, the communication was again opened, and was kept open till September 17th, when it was closed for the season.

The quantity of water received from the river during the summer cannot be very accurately ascertained, as during the time of flow, a number of changes were made in the section and capacity of the water-course. Rough gaugings were made, however, and the quantity computed from them is 1,676,600,000 gallons; or equal to the supply required in the city taken at the average for the year, for 110 days.

On page 50 will be found a table giving as has been customary, the rainfall on the lake water-shed, amount of water consumed and wasted, rise or fall of the lake-surface, total available amount of water and available percentage of rainfall received into the lake.

The figures of this table are but roughly approximate, owing to the want of accurate data for the calculations. Although it would cost a considerable sum to provide the means for properly measuring the flow in the conduit, the waste at the dam, the average rainfall for the entire water-shed, etc., yet the value of the results to be obtained from reliable measurements would fully warrant the necessary expenditure.

The figures for 1872, in columns 4, 6 and 7 of the table, include the quantity of water received from the Sudbury River, but those in the last three columns refer to the water-shed of the lake alone.

It will be noticed that had no water been received from the river, the lake-surface, instead of rising, would have stood at the end of the year somewhat lower than at the beginning.

CONDUIT.

A thorough examination of the interior of the conduit, from the lake to Chestnut Hill Reservoir, was made October 12th and 13th.

It was found in a better condition than had been anticipated, but a number of new cracks were discovered, and many of the old ones had widened.

The following transcript of the record made by Mr. Wiggin, clerk of the Water Board, will show the number and position of the cracks; those marked with an asterisk being the new ones, or the ones never before recorded.

JOSEPH P. DAVIS, ESQ., *City Engineer:* —

DEAR SIR: Entered the conduit at lake at 9.15 A. M., Oct. 12th.

For a long distance the bottom is very sandy, and the sides are covered with a substance resembling sponge. There are no cracks, however.

We reached Dedman's Brook at 11.45, and re-entered the conduit at 1.15. At station *160 is a crack in top arch. 169 slight crack, also at 179 and 180.

The conduit so far from Dedman's Brook is very clean.

At 182 and 3 is a crack about ¼ inch wide.

*228 to 230, slight crack.

247 and 8, crack in top arch quite large.

254, bottom quite muddy.

*255 to 57½, crack, also at *259.

Between 272 and 3 is a large crack, that has been repointed, but has not started.

274, quite a crack in several places.

284, muddy again.

*292 to 6, small cracks.

298, muddy.

13 to 14, crack, which looks as if it had spread where it was repointed, and water drips through; sand in bottom, also.

*15½ to 16½, quite a crack in top.

*17 to 18, large crack; also sandy.

Reached Grantville Waste Weir at 4.05, which is Station 49½. Conduit very clean.

Between *51 and 2, slight crack.
" 53 and 5, " "
" *64 and 5, " "
" 77 and 8, several cracks.

107 and 9½, crack that was repointed; has started, especially at 109.

Reached Lower Falls, Station 111½, at 5.10.

SUNDAY, Oct. 13th.

Entered conduit at 10.35.

142–3, little sandy.

*160, each side of man-hole is a crack.

163–4, sandy.

Between 174 and 80, some moss on each side of conduit.

196–7, crack.

216 to 218½, several bad cracks in top and on left.

232½ to 34, “ “ “ “

242½ to 44, “ “ “ “ “ also mossy.

Reached Newton Centre, Station 9, at 12.50; left again at 1.20.

*50½ to 52½, bad cracks. Conduit very clean.

Reached ventilator at 2.17; left again 2.40.

*86½, crack on right.

88 to 90, considerable fungus.

93, crack on right.

*103½, crack in top.

108½–110, several cracks, been repointed, not started.

*115 to 117, crack.

118, crack on right.

119–124½, several bad cracks on each side and top. Repointing is all right.

Bottom of conduit very rough.

125½ to 26½, slight crack.

*128–9, crack in top.

Reached intermediate gate-house, 3.15.

A statement of the condition of the grounds and structures, pertaining to the lake and conduit, will be found in the report of Mr. Stanwood, Superintendent of the Western Division. The keeper's house at the lake is in a bad state, and either it should receive thorough repair, or a new one should be built.

RESERVOIRS.

The monthly and yearly average heights above tide marsh level of the water, in the several reservoirs, are given in the accompanying tables on pp. 44–46.

It will be seen that the average height for the year has been the same in the Chestnut Hill, as in the Brookline Reservoir, and greater by $\frac{61}{100}$ of a foot, than the heights in the latter during 1871.

The Beacon Hill and South Boston Reservoirs are not now kept in open communication with the distributing system, and therefore the heights of water in them no longer indicate the pressure upon the street mains in their vicinities. The only useful purpose these reservoirs serve at present is to store a quantity of water for use in case of fire, or of accident to the mains which supply the districts about them.

The Beacon Hill Reservoir has too high an elevation to be of use in connection with the low-service distribution, and there appears to be no good reason why it should not be abandoned, provided the proposed one upon Parker Hill be built, as the latter will command the Beacon Hill district, and insure an adequate supply for fires.

The South Boston Reservoir is also located too high to be of much use in connection with the low-service of its district, but as it stands upon a common or park, and its maintenance is inexpensive, and as it will serve to hold in store a considerable quantity of water, for use in emergencies, — such as a break in the supply main leading to South Boston, — it probably will be thought best not to remove it.

The East Boston Reservoir has been thrown out of service during the latter half of the year, and that section of the city supplied under the much greater head of the Charlestown works.

DISTRIBUTING SYSTEM.

The distributing pipes have been largely extended during the past year, more especially in Dorchester and Roxbury. The total amount of cast-iron pipes laid in 1872 is 17.8 miles.

The work of connecting Telegraph Hill, in South Boston, with the 12-inch high-service main in Washington street, Dorchester, was finished early in the year. The connection consists of a line of 12-inch pipes, laid through Bowdoin and Hancock streets, and of the new 20-inch low-service main, leading through Dorchester avenue and Dorchester street to Telegraph Hill.

The use of the 20-inch main for this purpose requires the supply to the South Boston low-service to be kept up through the single line of 20-inch pipe in Dover street. These pipes were laid when the Cochituate works were built, and are not protected by the tar coating now used.

Beyond question they are badly tuberculated, and are probably reduced in capacity of delivery, so as to be not much more than equivalent to 16-inch coated pipes.

The population of South Boston is not far from 40,000, and that it may be properly supplied with water, and as a safeguard in case of accident to or repairs upon the Dover-street pipes, a new main should be laid, or the Dorchester-avenue main should be returned to its original purpose, and a new main, of smaller diameter, provided for the high-service.

Pressures recently observed during the morning hours, at the hydrant near the corner of E and Seventh streets, show a loss of head, of about 28 feet, between that point and the Brookline Reservoir, and a large portion of this loss must be due to the friction in the Dover-street main.

In the report of this department for last year, Mr. Crafts recommended that a new high-service main be laid from the pumping works to Beacon Hill, and the old 30-inch main, now supplying the Beacon Hill high-service, be used to aid in the supply of the low-service of the city proper. I fully endorse his recommendation, and would urge that it be acted upon at an early day.

To ascertain the losses of head at the end of the large supply mains, and in the business portion of the city, Mr. Jones, Superintendent of the Eastern Division, has taken gauge readings from the 40-inch main near its junction with the 36-inch main (reduced to 30 inches) on the Common, and also at the hydrant corner of Broad and Milk streets.

From these it appears that during the morning hours — or from 8 to 11 o'clock — the loss of head on the Common is from 14 to 17 feet; and that at the corner of Broad and Milk streets, during the same hours, is from 30 to 37 feet. It will be noticed that the loss between the two points at which the readings were taken (the observations were simultaneous) is nearly 20 feet, or greater than that between Brookline Reservoir and the Common. This indicates the need of greater capacity in the branch-mains feeding the easterly portion of the city.

All the territory lying to the north and east of Cambridge, Court, Tremont, and Essex streets is chiefly supplied from the single 30-inch main, in Boylston street; now the application of the 30-inch high-service main to the low-service distribution, as recommended, will give a new and very important connection between the Common and that territory, and materially improve the pressure where improvement is much needed.

If it should not be deemed advisable to now incur the expense of laying the new high-service main the entire distance between the pumping station and Beacon Hill, that portion of it between the Common, near Boylston street, and the hill, can be laid this season, and thus release enough of the 30-inch main to give the desired connection between the Common and Haymarket square on the low-service.

The Engineers of the Fire Department, holding the opinion that hydrants of much greater capacity than those now in use, and of a kind that will allow of the concentration of a number of engines at one point, are essential for proper protection against fire, especially in districts covered with high and valuable buildings, have recommended that either the Lowry or Hill hydrant be adopted. In conformity to this recommendation, your Board has decided to substitute the Lowry for the old hydrants in the "burnt district." To furnish these with a full supply of water requires that the existing street mains should be replaced by new pipes of greater capacity.

Plans and estimates for this work have been submitted and accepted, and an appropriation has been made by the City Council to carry it out.

It is desirable that these hydrants be used at all points, where tall and expensive buildings are found, or where there are buildings filled with materials of a very combustible character, such as the large wood-working shops, piano and organ manufactories, etc.; and to make their full capacity available, it will, in many instances, be necessary to make some modifications in the distributing system of pipes that will effect a more rapid delivery of water than is now possible.

Sectional plans of Roxbury, four in number, on a scale of two hundred feet to an inch, showing the water pipes as laid, with the location of gates and hydrants, have been made for the Superintendent of the Eastern Division, and similar plans of Boston proper and of Roxbury and Dorchester, on a scale of one hundred feet to an inch, are in preparation. The plans of Boston proper, thirteen in number, are practically completed, and those of Roxbury, twenty-two in number, are nearly so.

PUMPING WORKS.

The following table shows the total and monthly work done by the engines during the past year, and the amount of coal consumed in doing it: —

Statement of Operations at the High-Service Pumping Works for the year 1872.

1872.	Total pumping time.			Daily average pumping time.		Daily average amount pumped.	Hourly average am't pumped.	Average maximum hourly draft.	Average minimum hourly draft.	Greatest hourly draft.	Least hourly draft.	Average No. of revolutions per minute.	Average amount of coal used per day.	Percentage of ashes and clinkers.	Quantity pumped per lb. of coal.
	Days.	H'rs.	Min.	H'rs.	Min.	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons		Lbs.		Gallons
January	24	14	40	19	3.23	599,690	31,474	43.544	20,090	80,370	16,215	11.16	1,925	17.81	311
February	23	2	15	19	6.72	594,736	31,118	41,647	20,680	52,640	16,920	11.03	1,987	17.94	299
March	24	12	15	18	58.55	620,150	32,681	47,575	20,900	78,255	16,685	11.59	2,070	17.65	300
April	23	21	30	19	7.	593,915	31,068	41,206	18,910	51,700	16,215	11.02	1,907	18.72	311
May	24	16	45	19	7.26	619,354	32,391	43,125	19,217	52,640	16,450	11.49	1,765	20.40	351
June	23	20	30	19	5.	672,500	35,240	44,780	22,121	50,525	17,860	12.50	1,979	20.18	340
July	27	23	45	21	.40	793,428	36,615	49,012	22,189	58,515	18,800	12.98	2,183	20.05	363
August	31	. . .	. . .	24	. . .	844,552	35,190	50,889	20,210	68,620	18,800	12.48	2.115	20.84	399
September	30	. . .	. . .	24	. . .	828,367	34,515	51,908	19,137	62,510	16,920	12.24	2,384	20.50	347
October	30	22	. . .	23	56.13	818,969	34,216	52,369	18,254	66,035	15,980	12.13	2,562	20.36	320
November	29	23	30	23	59.	856,121	35,696	53,610	19,638	75,905	16.450	12.66	2,626	21.20	326
December	31	. . .	. . .	24	. . .	960,202	40,008	57,136	24,023	76.375	18,565	14.19	2,758	21.80	348
	325	13	10	21	20.24	733,499	34,184	48,069	20,447			12.12	2.188	19.79	335

The average daily amount pumped for the year has been 733,499 gallons; the daily average for 1871 was 557,634 gallons; the increase is about 31 per cent.

Owing to this increase, and to the necessity of furnishing an abundant supply of water for fires within the high-service area, the existing pumping machinery is unable to perform the duty required of it. I was therefore directed by your Board, early in the season, to report upon the best means for securing an adequate supply for all purposes; and in obedience to those orders the following report was presented.

CITY OF BOSTON.

"OFFICE OF THE CITY ENGINEER, CITY HALL.
"BOSTON, March 4, 1873.

"CHAS. H. ALLEN, Esq., *President Cochituate Water Board:* —

"SIR, — The following report relating to the best method of increasing the effective capacity of the high-service system of water supply is made by request of Mr. Haven, Chairman of the Committee on Eastern Division.

"The districts included within the limits marked out on the map for the high-service distributing system constitute more than one-third of the present area of the city.

"They are: Beacon Hill in Boston Proper, Telegraph Hill in South Boston, Parker's Hill, Fort Hill, Tommy's Rock and the Seaver Hill Territory in Roxbury, and the range of high lands which forms the greater portion of Dorchester; making in all an area of about 3,500 acres.

"A part of this area is not now supplied with water, in fact has scarcely any population, and a large portion of that which is supplied is not thickly populated; but both parts contain some of the most desirable land for residences within the city limits, and evidently are destined to be rapidly occupied.

"Future annexations will greatly increase the high-service area, both absolutely and relatively, and if all the territory extending to Mother Brook, between the Charles and Neponset rivers, shall form the future city, or one metropolitan district, then the area to be supplied from your high-service system will be very much larger than that to be furnished with water by the low-service.

"It is therefore evident that the high-service works will in a few years form one of the most important divisions of the entire system of water supply, and it is particularly desirable that their general character and outline shall be determined upon at as early a day as the necessary data for this purpose can be obtained, that whatever extensions are made in the existing system may, if possible, be so made that they will form parts of, or be available for, the system of the future.

"Although the data are not now at command from which even a general outline of this system can be determined, nevertheless, there are certain features which it must or should have, that can be pointed out, and which have a bearing on the question that is the more immediate subject of this report.

"The water must be raised by machinery to an elevation that will give the requisite head upon the distributing pipes, and it is of great importance that at the point where this machinery is located there shall be a large store of water, that no interruption may occur to the supply in case the aqueduct or pipe which furnishes the water to the pumps is temporarily thrown out of use for examination, or repairs, or by accident to it.

"This condition requires the eventual abandonment of the location of the engines which now supply the high-service, for a new one either at the Chestnut Hill or the Brookline Reservoir, or at some new reservoir that may be built, specially for the purpose, at a more favorable point.

"There are other reasons than that of a want of a store of water, why the present location on Elmwood street, of the high-service machinery, is not the proper one for the machinery of a system of works that is to supply an extensive territory and a large population. There is a want of room at this point; the engine buildings would be exposed to the attacks of fires originating on neighboring premises; the location is on the outskirts of the territory to be supplied, or is not sufficiently central for an economical system of distribution; it would require the water to be brought to it in pipes, at great cost, and a considerable loss of head; and it is so low that a pressure of over thirty pounds per square inch is created on the suction side of the pump piston, which produces a harsh action of the machinery, and to some extent impairs its efficiency.

"The new works should be of a kind that have reservoirs as centres for the distributing pipe systems.

"The area to be supplied consists of various districts, more or less isolated, for each of which there should be, as a matter of economy, a distinct system of distribution, and to secure to them an uninterrupted supply under a nearly constant head, and that the supply mains leading to the districts may be of the minimum size and cost, reservoirs should be established at convenient points.

"The existing high-service works were designed to supply a limited area only, and were not constructed upon a scale to meet the requirements of the large territory even now depending upon them, much less to provide for further extensions due to annexation.

"The pumping machinery consists of two engines, each of a capacity to pump 2,400,000 gallons in twenty-four hours, when making thirty-five revolutions per minute. These engines are supplied from a single line of pipes, sixteen inches in diameter, under a head which gives about thirty-three pounds of pressure upon the pump piston; and to enable the latter to work at the guaranteed speed, it was found necessary to connect the supply line with a large air-chamber. The pump force mains, immediately after leaving the engine building, are united by a Y branch into a single line of pipes, sixteen inches in diameter, which leads to the stand-tower on Fort Hill, and is about 2,500 feet long. On account of the connection of the engines, through the supply and force pipes, they are found to react, one upon the other, when working together, and it is not considered safe to thus use them at a speed which will give a much greater discharge of water than will one engine alone, run at its safe maximum velocity.

"As the capacity of one engine is less than that of four steam fire-engines, it will be seen that the power to supply water in times of fire is very inadequate. The laying of independent supply and force mains would nearly double the available capacity of the engines for emergencies, and would provide a safeguard against stopping the supply in case of a burst.

"Under the existing arrangement, a burst in either the supply or force line would deprive the high-service district of water until repairs could be made, and should such an accident occur during a fire, the consequences would be serious.

"The steam parts of the engines having sufficient power to drive larger pumps than are now in use, it has been suggested that these pumps may be replaced by others of greater capacity. Such a change would be somewhat of an experiment, and unless much more valve area, or a better passageway for the water than the pumps now have, can in some way be provided, I doubt whether it would effect much gain. But even if it can be successfully made, sufficient pumping capacity would not be secured, under adverse circumstances, — such as one engine being under repair, or dismantled for cleaning, — to meet the demand for water in case of a large fire within the high-service limits.

"The pumps now in use are fourteen inches in diameter, and have a stroke of three feet, and a capacity of forty-eight gallons per revolution of the engine. The diameter that has been proposed for the new pumps, to replace the old ones, is sixteen inches, which gives a capacity of sixty-two gallons per revolution, or 130,000 gallons per hour, when the engine is running at its guaranteed speed of thirty-five revolutions per minute.

"The average maximum hourly consumption of each day, during the coming season, will not fall short of half of this amount, or say 65,000 gallons, and will much exceed it in the following years. If, in addition to this consumption, there be required a supply for six steam fire-engines (which number the Chief Engineer of the Fire Department says should be provided for), each throwing 450 gallons per minute (the average amount), the delivery must be at the rate of 227,000 gallons per hour.

"Both engines, running together, would meet such a demand, but perfect safety is not secured when it is necessary that all the machinery shall be put in operation to meet an emergency that is likely to arise without previous warning. There should always be a reserve engine, to admit of repairs and cleaning at any time. Setting aside the domestic consumption, one engine alone, even if provided with a sixteen-inch pump, could not supply more than five fire-engines; it is clear, therefore, that, to secure proper safety, some special provision must be made to keep up the supply in times of large fires.

"This provision may consist either in the erection of a third engine, or in the building of a reservoir and connecting it with the stand-pipe.

"If the engine be erected, it should have a capacity to pump about five million gallons per day, that when in use it alone may furnish all the water required both for extinguishing fires and for domestic supply. Owing to the comparatively small draft at night, such an engine would be larger than can now be conveniently used for keeping up the daily supply; but, for the present, it can be kept in readiness for service in emergencies, and, as the consumption increases, can be gradually brought into more constant use.

"There are now two boilers in service, each rated at one hundred horse-power, or of sufficient capacity to drive the new engine; nevertheless, a third boiler, of somewhat greater power, should be provided.

"The arrangement proposed is, then, two small engines (the existing ones), each of a maximum capacity of about two and a half million gallons per day, and a new engine and boiler having a capacity of about five million gallons, and supply and force mains twenty-four inches in diameter.

"The two small engines, when run together, or the large engine alone, will furnish any supply that is likely to be required from them within the next few years.

"The chief objection to this plan is, that a large expenditure will be necessary for machinery, buildings, mains, etc., which probably will be thrown out of use at the end of a few years.

"A reservoir can be built on Parker's Hill, at an elevation that will give sufficient head on the high-service pipes, or with a water-surface about two hundred feet above tide-marsh level.

"If this reservoir be connected with the stand-tower on Fort Hill, it will be put in good communication with the high-service distributing system, and will *instantly* respond to any demand for a sudden increase of supply.

"The ratio between the average and maximum quantities of water pumped in an hour, during each month, has varied in the past year from $\frac{100}{143}$ to $\frac{100}{255}$, as shown in the following table: —

" *Table showing the average and maximum quantities of water pumped in an hour, and the ratios between them, for each month of* 1872.

MONTH.	Average.	Maximum.	Ratio.
	Gallons.	Gallons.	
January	31,474	80,370	As 1 to 2.55
February	31,118	52,640	As 1 to 1.69
March	32,681	78,255	As 1 to 2.39
April	31,068	51,700	As 1 to 1.66
May	32,391	52,640	As 1 to 1.63
June	35,240	50,525	As 1 to 1.43
July	36,615	58,515	As 1 to 1.60
August	35,190	68,620	As 1 to 1.95
September	34,515	62,510	As 1 to 1.81
October	34,216	66,035	As 1 to 1.93
November	35,696	75,905	As 1 to 2.13
December	40,008	76,375	As 1 to 1.91
Averages	34,184	64,508	As 1 to 1.89

"From the above it will be seen, that an engine which has to vary its speed as the consumption of water varies, is required to be about double the capacity of one doing the same work under a uniform speed; that is to say, to furnish a given supply, an engine pumping into a stand-pipe should have twice the capacity of one pumping into a reservoir.

"Hence it follows that the building of a reservoir, besides insuring an ample supply of water for the extinguishment of fires, would, by virtually doubling the pumping capacity, be equivalent to the addition of a new engine having twice the power of each of the existing ones.

"If it be built to serve a temporary purpose only, its connection with the stand-tower may be made with a line of twenty-inch pipes, but as its proposed location is the proper one for one of the auxiliary reservoirs of the future high-service system, its pipe connections should be proportioned for future use, and this use should be kept in view in determining upon the capacity of the reservoir, the design of the chambers, and the character of the work.

"Its office, in the works of the future, will be to regulate the supply to Beacon Hill, Roxbury Highlands, and a portion of Dorchester.

"Estimates are hereinafter given, first, for a new engine with its buildings, and supply and force mains; second, for a new reservoir, designed to serve a temporary purpose, and having a capacity of 4,500,000 gallons; third, for a new reservoir, designed to form a part of the future high-service system, and having a capacity of about 6,000,000 gallons.

"It will be noticed that the land damages are the most important items of the last two estimates, but it should be borne in mind that the value of this land is increasing from year to year, and that if not now taken for the purpose proposed, it probably will be eventually.

"In conclusion, I would recommend that a new reservoir, having a capacity of at least six millions of gallons, be built on Parker's Hill, and connected with the stand-tower by a twenty-four inch line of pipes, and would suggest that, until this work is completed, the following precautionary measures be taken: —

"First, to make such connections at the Beacon Hill and South Boston reservoirs as will permit of quickly putting them in communication with the high-service pipe mains.

"Second, to keep these reservoirs well filled with water.

"Third, to employ men familiar with the location of the gates and street mains, whose duty shall be to attend every alarm of fire in the high-service districts, and who shall be given proper instructions, in reference to opening communication with the reservoirs, and to shutting off portions of the high-service area when the exigency of the case requires.

"The following are the approximate preliminary estimates of cost: —

"FIRST ESTIMATE.

Engine and boiler; capacity five millions of gallons in twenty-four hours	$60,000
Engine buildings and foundations . . .	22,000
Supply main, twenty-four inches diameter . .	6,150
Force main, " " " . .	30,500
Land damages	11,000
	$129,650
"Add ten per cent.	12,965
"Total	$142,615

"SECOND ESTIMATE.

Reservoir on Parker's Hill; capacity about 4,500,000 gallons	$ 53,000
Line of twenty-inch pipe to stand-tower . .	31,000
Land damages	75,000
	$159,000
"Add ten per cent.	15,900
"Total	$174,000

"THIRD ESTIMATE.

Reservoir on Parker's Hill; capacity about 6,000,000 gallons	$73,500
Line of twenty-four inch pipe to stand-tower .	39,500
Land damages	100,000
	$213,000
"Add ten per cent.	21,300
"Total	$234,300

"Respectfully submitted,

"JOSEPH P. DAVIS,

"*City Engineer.*"

Application has been made to the Legislature for an act authorizing the construction of a reservoir upon Parker's Hill. The season will be so far advanced before the necessary appropriations can be made, and the work put under contract, that it is improbable that the reservoir can be made ready for use before another summer.

The following is a statement of the cost of pumping for the year 1872: —

Salaries	$3,933 75
Fuel	2,588 00
Repairs	433 91
Gas	316 22
Small supplies	113 42
Total	$7,435 30

Approximate cost per million gallons raised one foot high, 34 cents.

CONSUMPTION OF WATER.

The table on pages 47 and 48 gives the average daily consumption of water for each month since 1848. The daily average for the year 1872 was 15,063,400 gallons, which is in excess of the average for 1871 by about 8 per cent. The greatest consumption was in November, for which month the daily average was 17,591,400 gallons.

The great fire of Nov. 9th began at about quarter past seven in the evening, and was not brought under control until the afternoon of the 10th. The consumption of water in the city for all purposes, from 6 A. M. of the 9th to 6 A. M. of the 11th, or for 48 hours, was 43,500,000 gallons. The average use for domestic purposes, just previous to the fire, was 12,500,000 gallons in twenty-four hours; hence, it appears that fully 18,500,000 gallons were used by the Fire

Department in the thirty-five hours from 7 P. M. Nov. 9th, to 6 A. M. Nov. 11th, much the greater portion of which was used in the first eighteen hours.

This quantity would cover the entire area burnt over (taken at 60 acres), 10½ inches deep, and would cover the area occupied by the buildings about 14 inches deep.

ADDITIONAL SUPPLY.

Since the date of the last yearly report, preliminary surveys have been made to determine the location of a conduit from Farm Pond to Chestnut Hill Reservoir, and the best position for storage basins upon the Sudbury River. A plan of works for securing and conveying to the city the additional supply to be drawn from this river has been devised, and its cost estimated, and a report, bearing date January 27, together with plans of the various structures required, was presented to the Water Board. The plan proposed has received the approval of the City Government, and an appropriation of $500,000 has been made to cover the expenditures of this year.

A force will at once be put into the field, to make the surveys for the final location of the conduit line, and portions of the work got under contract at as early a day as possible.

RAIN-FALL.

The usual tables giving the rain-fall at various points for the year 1872 will be found appended.

Respectfully submitted,

JOSEPH P. DAVIS,
City Engineer.

Average Monthly and Yearly Heights, in feet and decimals, of the several Reservoirs above "tide marsh level," 1862–72.

BROOKLINE.

Maximum high-water line, 124.60.

MONTH.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
January	122.46	123.64	122.37	123.31	122.28	122.00	123.29	122.58	122.83	121.89	118.64
February	122.85	123.23	122.61	122.82	122.47	123.12	122.79	122.64	122.60	122.54	120.48
March	123.52	123.23	123.62	123.26	123.19	123.05	122.33	122.48	122.77	122.08	122.04
April	124.18	123.85	123.82	123.38	123.45	123.00	123.04	122.60	122.56	122.00	122.10
May	124.00	123.52	123.62	122.65	123.04	123.07	123.04	122.77	122.75	121.79	122.29
June	123.25	123.17	122.66	123.23	123.29	122.34	122.77	121.85	122.64	121.98	122.25
July	123.73	122.76	122.87	123.33	122.97	122.98	122.77	122.10	122.50	122.19	121.25
August	123.70	123.11	122.64	123.39	122.80	122.23	122.75	122.19	122.23	122.06	122.14
September	123.64	123.36	122.03	123.29	122.81	122.52	122.12	122.50	122.35	121.50	123.44
October	123.85	122.26	123.19	123.29	123.03	122.65	122.31	122.58	122.64	119.54	122.96
November	124.07	123.63	122.78	123.38	122.75	122.89	122.56	122.46	122.60	116.94	120.98
December	123.46	122.53	122.29	123.24	122.64	122.37	122.00	122.92	122.50	117.71	121.06
Yearly Average . .	123.56	123.19	122.87	123.21	122.89	122.69	122.65	122.48	122.58	121.02	121.63

BEACON HILL.

Maximum high-water line, 121.53.

MONTH.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
January	117.48	118.36	117.72	119.18	119.20	119.11	120.20	118.51	118.63	119.26	116.20
February	119.46	118.18	117.54	118.91	119.65	118.59	120.11	118.72	117.78	118.95	116.38
March	119.18	118.03	116.38	120.58	120.72	119.45	120.57	118.30	118.07	119 38	116.49
April	117.91	117.27	117.21	121.28	120.70	119.86	120.57	118.82	118.34	119.59	116.72
May	117.59	116.33	116.53	120.31	119.53	118.50	118.65	119.68	118.63	119.09	116.70
June	116.39	115.40	115.31	120.56	118.53	118.34	118.45	117.13	118.03	. .	116.99
July	116.46	116.34	115.32	121.23	119.51	119.00	120.24	117.20	119.30	109.63	116.95
August	116.22	116.05	115.19	119.83	119.17	117.70	117.11	117.63	119.59	109.68	117.11
September	116.22	116.12	115.91	119.03	119.39	120.46	118.20	117.45	117.72	. .	117.65
October	. .	115.87	118.17	118.43	119.50	120.46	118.61	118.36	117.80	. .	118.20
November	117.20	116.85	118.55	120.14	119.78	120.84	119.03	118.45	118.61	. .	118.36
December	115.23	118.30	117.35	120.50	119.37	120.02	117.78	118.36	119.38	. .	118.51
Yearly Average . .	117.21	116.92	116.77	120.00	119.59	119.36	119.11	118.13	118 49	116.51	117.19

Average monthly and yearly heights, etc. — Continued.

SOUTH BOSTON.

Maximum high-water line, 122.86.

MONTH.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
January	113.66	115.73	110.63	114.21	114.38	112.46	111.15	111.15	114.46	112.51	109.34
February	114.08	115.54	110.94	113.42	114.44	111.36	111.15	111.34	114.80	112.61	109.42
March	114.12	115.36	111.13	113.64	113.51	111.74	111.11	111.63	114.51	112.74	109.38
April	114.93	114.73	112.07	114.82	114.99	111.88	111.55	111.96	113.57	112.63	109.67
May	115.74	112.71	111.64	115.44	114.90	111.63	111.61	111.78	113.53	112.71	109.32
June	114.22	111.39	109.06	114.91	114.32	111.19	112.15	111.51	113.36	112.44	109.24
July	114.23	109.75	108.57	114.36	113.96	111.53	111.53	111.19	112.21	115.32	109.05
August	114.03	109.80	109.53	113.80	114.07	111.90	111.53	110.65	110.78	114.03	108.82
September	114.04	109.64	110.21	113.69	113.41	111.70	111.44	108.76	110.15	113.13	106.49
October	114.24	109.90	112.49	112.89	112.74	111.29	111.44	113.15	110.01	112.80	109.34
November	115.94	111.25	112.49	112.74	112.03	111.26	111.44	113.76	111.86	112.76	110.61
December	116.35	109.90	113.89	113.78	112.62	111.08	111.11	113.88	112.61	109.26	110.71
Yearly Average . .	114.63	112.14	111.05	113.97	113.78	111.59	111.44	111.74	112.65	112.74	109.28

EAST BOSTON.

Maximum high-water line, 107.60.

MONTH.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
January	96.26	95.64	90.22	96.12	93.61	91.89	92 81	99.72	104.45	101.18	103.47
February	94.94	93.86	92.98	97.00	96.61	92.06	92.10	100.56	104.20	104.33	102.56
March	95.75	94.29	93.50	94.83	94.22	91.69	91.14	100.60	100.89	106.12	100.41
April	96.71	95.65	96.16	96.52	96.47	90.91	Shut off for repairs.	Shut off for repairs.	104.93	107.14	100.10
May	96.99	93.07	97.68	96.04	95.85	89.63			105.91	106.50	101.54
June	95.99	91.10	94.22	93.91	93.71	91.82			106.00	106.43	106.83
July	96.13	90.43	92.34	96.82	95.35	94.60		100.60	103.87	106.47	. .
August	93.96	91.23	92.84	95.78	93.85	94.16		95.08	104.25	105.22	. .
September	95.57	91.96	95.00	94.52	Shut off for repairs.	99.40		94.87	102.77	104.91	. .
October	91.80	95.02	97.55	93.38		96.85		96.97	105.20	104.81	. .
November	93.57	93.36	98.14	92.23		93.47		101.12	104.75	104.56	. .
December	95.77	89.79	97.27	94.34	92.29	92.57		102.06	105.18	104.58	. .
Yearly Average . .	95.29	92.95	94.83	95.12	94.66	93.25	92.02	99.06	104.37	105.18	. .

Average monthly and yearly heights, etc. — Continued.

CHESTNUT HILL.

Maximum high-water line, 125.00.

MONTH.	1870.	1871.	1872.
January	.....	102.00	116.90
February	.....	102.81	120.46
March	.....	105.19	122.29
April	.....	110.48	122.52
May	.....	116.21	122.54
June	.....	121.46	122.35
July	.....	122.40	121.77
August	.....	122.02	122.15
September	.....	121.44	122.77
October	.....	119.67	122.08
November	100.80	117.08	122.42
December	101.29	115.35	121.40
Yearly Average	101.04	114.67	121.64

Consumption of Water. Daily Average Number of Wine Gallons drawn from the Brookline Reservoir.

MONTH.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.
January	1,700,000	5,181,700	7,233,700	8,230,900	8,050,500	10,695,200	9,702,700	12,669,000	15,089,000	12,160,000	14,512,000	17,862,000
February	. . . .	5,214,000	7,221,100	8,790,300	8,643,600	10,654,200	10,349,800	12,791,000	14,175,000	14,399,000	14,769,000	18,901,000
March	1,550,000	4,841,200	6,137,900	8,521,100	8,202.200	9,582,100	10,125,600	12,504,000	13,941,000	14,154,000	14,480,000	15,409,000
April	. . . .	4,961,000	5,365,200	8,048,700	7,903,600	8,738,500	8,540,000	10,800,000	12,454,000	13,465,000	13,760,000	14,621,000
May	3,600,000	5,346,100	6,238,400	8,350,000	8,123,400	9,685,300	9,103,800	10,378,000	12,414,000	11,423,000	11,302,000	14,790,000
June	4,300,000	6,906,500	7,925,000	8,033,100	8,945,900	11,745,200	9,984,400	11,223,000	12,504,000	10,867,000	11,639,000	17,838,000
July	4,800,000	8,514,200	7,180,200	9,608,000	8,809,200	10,613,800	11,056,600	13,167,000	13,551,000	13,621,000	13,219,000	17,239,000
August	4,100,000	8,004,600	7,235,000	9,709,300	8,461,900	10,028,100	11,120,800	12,664,000	13,077,000	13,141,000	12,704,000	19,297,000
September . . .	4,800,000	6,585,500	7,230,600	7,920,000	8,640,700	9,712,400	11,710,800	11,522,000	12,030,000	12,745,000	12,389,000	17,957,000
October	4,550,000	4,504,300	6,716.600	6,930,000	8,871,100	8,769,800	10,771,200	11,891,000	10,864,000	12,969,000	12,026.000	16,938,000
November . . .	3 800,000	4,960,500	6,473.500	6,637,900	8,624,700	8,030,200	10,383,200	11,691,000	11,372,000	12,143,000	12,715,000	16,862,000
December	3,600,000	5,037,000	7,663,400	7,195,800	9,228,400	10,597,600	11,307,200	13,284.000	11,241,000	13,075,000	14,586,000	19,151,000
Average for year	3,680,000	5,837,900	6.883,800	8.125,800	8,542,300	9,902,000	10,346,300	12,048,600	12,726,000	12,847,000	13,175 000	17,238,000

Consumption of Water. — Continued.

MONTH.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
January	21,106,769	17,000,000	16,112,000	18,954,000	13,412,000	14,850,000	13,511,000	15,992,000	15,426,000	12,525,000	14,110,000	12,203,900
February	20,804,131	17,000,000	17,323,000	18,846,000	13,318,000	13,385,000	13,831,000	16,927,000	14,731,000	14,052,000	15,070,000	15,172,000
March	19,453,344	17,300,000	16,681,000	16,841,000	12,027,000	12,284,000	13,100,000	13,722,000	14,789,000	14,646,000	10,162,000	15,788,500
April	17,151,593	15,300,000	15,125,000	16,506,000	11,975,000	11,251,000	12,770,000	12,636,000	14,650,000	14,703,000	11,814,000	12,281,000
May	16,687,832	14,300,000	15,407,000	16,094,000	13,660,000	11,076,000	12,301,000	13,846,000	13,902,000	13,759,000	12,222,000	13,830,600
June	17,231,984	16,600,000	16,138,000	17,730,000	14,391,000	11,878,000	13,625,000	14,351,000	14,252,000	14,824,000	15,695,000	14,617,600
July	18,897,809	16,400,000	15,954,000	18,112,000	13,207,000	12,668,000	14,250,000	14,676,000	18,378,000	16,392,000	15,748,000	16,377,100
August	18,272,365	17,000,000	16,980,000	16,188,000	13,426,000	12,441,000	14,546,000	14,479,000	17,632,000	17,107,000	16,019,000	15,017,900
September	18,098,259	17,000,000	17,035,000	16,798,000	12,624,000	11,842,000	13,186,000	16,072,000	15,741,000	16,785,000	16,512,000	15,072,600
October	17,987,128	17,300,000	15,779,000	15,479,000	11,273,000	12,396,000	13,518,000	14,954,000	14,096,000	16,528,000	13,856,000	15,544,800
November	16,604,076	17,100,000	16,028,000	14,079,000	11,750,000	11,262,000	12,707,000	13,975,000	13,608,000	14,677,000	13,574,000	17,591,400
December	15,976,362	17,000,000	16,295,000	14,547,000	10,877,000	11,412,000	15,434,000	15,600,000	13,640,000	14,094,000	12,564,000	17,263,700
Average for the year . .	18,189,304	16,600,000	16,238,500	16,681,000	12,662,000	12,229,000	13,565,000	14,769,167	15,070,400	15,007,700	13,945,500	15,063,400

Statement showing amount of Rainfall on Water-shed of Lake Cochituate, amount of Water consumed and wasted, available amount received into Lake, available percentage of Rainfall, etc., from 1852 *to* 1872, *inclusive. Water-shed of Lake* = 12,077 *acres.*

YEAR.	Rainfall.	Amount of Rainfall on Water-shed of Lake Cochituate.	Amount of Water drawn from Lake.	Amount of Water wasted from Lake.	Total amount consumed and wasted.	Rise of Lake during the year.	Fall of Lake during the year.	Total available amount of Rainfall received into Lake.	Available daily average am't of Rainfall rec'd into Lake.	Available percentage of Rainfall rec'd into Lake.
	Inches.	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	
1852*	47.93	15,759,207,000	2,974,042,800	4,020,566,885	6,994,609,685	. . . . . .	261,360,000	6,733,249,685	18,396.857	43 per cent.
1853	55.73	18,366,561,000	3,117,939,500	3,166,417,500	6,284,357,000	239,580,000	. . . . . .	6,523,937,000	17,873,800	35 per cent.
1854	43.15	14,187,562,000	3,614,230,000	4,187,733,020	7,801,963,020	. . . . . .	217,800,000	7,584,163,020	20,778,529	53 per cent.
1855	34.96	11,494,719,000	3,776,399,500	No acc't kept.	. . . . . .	. . . . . .	326,700,000	. . . . . .	. . . .	. . . . .
1856	40.80	13,414,892,000	4,409,787,600	No acc't kept.	. . . . . .	598,950,000	. . . . . .	. . . . . .	. . .	. . . .
1857	63.10	20,747,052,000	4,644,990,000	10,625,900,000	15,270,890,000	32,670,000	. . . . . .	15,303,560,000	41,927,562	74 per cent.
1858	48.66	15,999,232,000	4,689,155,000	1,934,500,000	6,623,655,000	. . . . . .	141,570,000	6,482,085,000	17,759,013	40 per cent.
1859†	49.02	16,117,602,000	4,808,875,000	7,569,000,000	12,377,875,000	283,140,000	. . . . . .	12,661,015,000	34,687,712	78 per cent.
1860	55.44	18,228,471,000	6,309,108.000	None.	6,309,108,000	174,240,000	. . . . . .	6,483,348,000	17,714,065	35 per cent.
1861	45.44	15,269,303,000	6,639,095,900	3,377,558,966	10,016,654,866	. . . . . .	1,459,260,000	8,557,394,866	23,444,917	56 per cent.
1862	49.69	16,337,890,000	6,059,000,000	33,200,000	6,092,200,000	1,306,800,000	. . . . . .	7,399,000,000	20,271,233	45 per cent.
1863	69.30	22,785,536,000	5,927,052.500	2,165,696,470	8,092,748,970	762,300,000	. . . . . .	8,855,048,970	24,260,408	39 per cent.
1864	42.60	14,006,726,000	6,105,306,700	1,368,746,000	7,474,052,700	. . . . . .	1,848,577,000	5,625,475,700	15,370,152	40 per cent.
1865	49.46	16,262,266,000	4,621,630,000	1,688,120,674	6,309,750,674	743,242,500	. . . . . .	7,052,993,174	19,323,270	43 per cent.
1866	62.32	20,490,455,000	4,463,585,000	None.	4,463,585,000	743,242,500	. . . . . .	5,206,827,500	14,265,280	25 per cent.
1867	56.25	18,494,795,000	4,951,225,000	2,482,041,000	7,433,266,000	. . . . . .	698,811,000	6,734,455,000	18,450.600	36 per cent.
1868	49.71	16,459,544,000	5,405,515,000	2,507,684,000	7,913,199,000	346,371,000	. . . . . .	8,259,570,000	22,567,160	50 per cent.
1869	64.34	21,099,808,000	5,500,696,000	1,635,570,000	7,139,321,000	480,882,000	. . . . . .	7,620,203,000	20,877,300	36 per cent.

1870	55.89	18,328,694,000	5,477,810,000	4,818,971,000	10,296,781,000	. . . . . .	1,736,085,000	8,560,696,000	23,453,900	47 per cent.
1871	45.39	14,885,300,000	5,223,500,000	None.	5,223,500,000	. . . . . .	250,933,000	4,972,567,000	13,623,470	33 per cent.
1872	48.47	15,895,364,000	‡5,775,151,200	None.	5,775,151,200	‡1,543,995,500	. . . . . .	5,642,480,300	15,416,610	35 per cent.
Average	. 51.32	Average daily waste for 19 years 7,437,900			Average daily capacity of Lake as a source of supply for 19 years, 21,089,850					44 per cent.
		" " " for 6 years, '52–59 . 14,378,900								
		" " " last 13 years, '60–72, 4,231,300								

* Observations of Rainfall at Lake Cochituate commenced 1852, and these observations are assumed as correct for the whole district. † Lake raised two feet.

‡ Amount received from Sudbury River in 1872, 1,676,666,400 gallons.

Table of the average monthly and yearly heights of water in the Lake above the bottom of the Aqueduct.

Month.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.*	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
nuary .	10.63	9.51	10.54	10.16	8.06	9.53	10.75	10.80	10.83	11.93	6.09	11.33	13.88	7.41	8.37	12.14	10.29	12.27	13.25	5.29	4.23
bruary	10.20	10.78	10.95	10.65	7.59	10.28	10.05	12.17	11.36	12.77	6.57	12.85	13.71	8.24	8.73	13.14	9.75	12.96	13.19	5.40	2.52
arch . .	10.49	10.44	10.93	10.68	6.96	10.67	9.35	12.45	12.67	13.21	8.65	13.95	14.33	12.28	10.58	13.57	10.96	13.21	12.81	7.96	1.19
pril . .	11.23	10.68	10.66	11.57	10.24	12.30	9.36	12.06	12.72	14.14	12.40	14.59	14.32	14.00	11.96	13.50	13.29	13.40	13.33	9.31	4.19
ay . . .	10.94	10.98	10.87	11.35	12.05	12.05	10.67	12.06	11.52	13.88	14.45	14.01	14.26	14.00	12.01	13.44	13.67	13.65	13.12	10.37	5.10
ne . . .	10.28	10.62	10.33	10.69	11.78	12.14	11.72	11.96	10.83	12.99	14.43	13.29	13.51	13.41	12.72	13.20	13.37	13.23	13.02	9.27	5.79
ly . . .	9.44	9.45	9.00	9.86	10.67	11.41	11.74	10.22	10.42	11.50	14.05	12.82	11.33	12.28	11.84	12.12	12.46	12.62	12.12	7.83	6.33
ugust .	8.40	8.64	6.67	9.01	11.59	11.70	11.30	10.24	9.42	10.27	12.97	13.73	9.65	11.18	11.79	12.17	11.70	11.04	10.37	6.27	7.04
ptember	5.68	7.78	6.64	7.52	10.82	11.72	10.40	9.84	9.42	8.71	11.33	13.43	7.91	10.09	11.59	12.00	11.61	9.73	8.67	5.00	10.02
tober .	6.55	7.34	5.90	6.42	10.10	11.10	8.72	10.15	10.35	7.79	10.30	12.94	6.46	9.02	11.72	11.10	11.83	10.58	8.10	3.81	11.46
vember	7.74	9.58	6.09	6.28	10.80	11.16	9.01	9.98	10.44	7.22	10.24	13.26	5.48	8.74	11.41	11.03	11.75	11.21	7.10	3.60	12.67
cember	8.49	10.57	8.38	7.29	10.97	11.02	9.85	10.54	11.17	6.88	11.70	14.06	5.41	8.48	11.68	10.51	12.33	11.77	6.40	3.83	12.40
arly av.	9.17	9.70	9.00	9.29	10.14	11.26	10.24	11.04	10.93	10.94	11.10	13.52	10.84	10.76	11.20	12.33	11.92	12.15	10.96	6.50	6.91

* High-water mark raised two feet.

CONDUIT AT THE LAKE.

The following table shows the varying depths of the water in the conduit at the gate-house, the number of days in each month that the water was running at those depths, and the average depth for each month.

Depths Ft. In.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Days.
0–11	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	. . .	. . .	2
0–11¾	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	1
1–0	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	1
1–6	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	1
1–7	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
2–0	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	1
2–1¾	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	1
3–8	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
4–0	. . .	. . .	. . .	3	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3
4–1	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
4–2	. . .	. . .	. . .	6	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	6
4–3	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
4–4	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
4–6	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
4–10	26	. . .	1	1	4	. . .	. . .	. . .	. . .	. . .	. . .	. . .	32
4–10½	. . .	. . .	. . .	. . .	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2
4–11	. . .	. . .	. . .	1	3	2	. . .	. . .	. . .	. . .	. . .	. . .	6
4–11½	. . .	. . .	. . .	. . .	4	2	. . .	. . .	. . .	. . .	. . .	. . .	6
5–0	. . .	. . .	. . .	2	9	11	. . .	. . .	. . .	. . .	. . .	. . .	22
5–0½	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
5–1	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
5–1½	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
5–2	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1
5–2½	. . .	. . .	. . .	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2
5–3	. . .	. . .	. . .	7	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	8
5–3½	. . .	. . .	. . .	. . .	5	. . .	. . .	. . .	. . .	. . .	. . .	. . .	5
5–4	. . .	. . .	. . .	. . .	4	9	14	. . .	. . .	. . .	. . .	. . .	27
5–6	. . .	1	15	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	17
5–8	. . .	. . .	. . .	. . .	. . .	2	. . .	2	30	19	. . .	. . .	47

Conduit at the Lake. — Continued.

Depths Ft. In.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Days.
5–10	...	...	...	...	...	2	17	29	...	7	19	...	74
6–0	...	...	...	...	...	...	...	...	...	3	1	...	12
6–1¼	...	...	...	...	...	...	...	...	...	...	1	...	1
6–2	1	...	...	...	...	...	...	...	...	1	...	1	3
6–3	...	...	...	...	...	...	...	...	...	...	9	22	31
6–4	...	...	...	...	...	...	...	...	...	1	...	...	1
6–8	...	2	...	...	...	...	...	...	...	...	...	...	2
6–10	...	1	...	...	...	...	...	...	...	...	...	...	1
7–0	1	24	13	...	...	...	...	...	...	...	...	...	38
8–0	2	...	...	...	...	...	...	...	...	...	...	...	2
8–4	1	...	...	...	...	...	...	...	...	...	...	...	1

Average Monthly Depths.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average for the year.
5–3¼	6–9¾	6–0¼	4–8	5–0½	5–1	5–7¼	5–9¾	5–8	4–10¾	5–11¾	6–2¼	5–7¾

Annual Amount of Rainfall, in Inches, at Lake Cochituate, Boston and vicinity, 1849 to 1872 inclusive.

YEAR.	PLACES AND OBSERVERS.						
	Lake Cochituate, by Supt. of Western Division, B.W.W.	Boston, by J. P. Hall, to 1865, by W. H. Bradley since "	Cambridge, by the Director of the Observatory.	Waltham, by Agent Boston Manufacturing Company.	Lowell, by Merrimac Manufacturing Company.	Lowell, by Locks and Canals Co., J. B. Francis.	Providence, by A. Caswell.
1849	. .	40.30	40.97	40.74	51.09	. .	34.69
1850	. .	53.98	54.07	62.13	45.68	. .	51.48
1851	. .	44.31	41.97	41.00	41.00	. .	43.30
1852	*47.93	47.94	40.51	42.24	42.78	. .	38.58
1853	*55.73	48.86	53.83	45.04	43.92	. .	53.27
1854	43.15	45.71	45.17	41.29	42.08	. .	46.25
1855	34.96	44.19	47.59	40.63	44.89	48.41	39.05
1856	40.80	52.16	53.79	42.33	42.49	45.97	40.97
1857	63.10	56.87	57.92	44.04	49.38	52.02	44.74
1858	48.66	52.67	45.46	37.40	37.73	35.80	44.51
1859	49.02	56.70	. .	48.49	47.51	48.41	45.29
1860	55.44	51.46	46.95	45.97	46.91	46.67	38.24
1861	45.44	50.07	50.14	36.51	43.32	42.95	44.25
1862	49.69	61.06	57.21	46.42	44.26	44.61	50.09
1863	69.30	67.72	56.42	53.66	52.37	57.81	54.17
1864	42.60	49.30	39.46	36.56	38.11	40.64	36.83
1865	49.46	47.83	43.59	35.84	37.38	38.82	44.69
1866	62.32	50.70	. .	43.46	38.18	41.36	46.04
1867	56.25	55.64	41.71	41.40	45.54	45.87	47.04
1868	49.71	64.11	39.89	44.65	47.96	49 58	53.52
1869	64.34	66.28	47.98	47.30	47.30	48.96	47.70
1870	55.89	59.73	41.53	39 40	46.30	48.71	49.02
1871	45.39	48.33	40.56	36.82	44 45	44.17	47.91
1872	48.47	58.04	52.73	45.80	44 32	48.67	48.71

* By J. Vannevar.

Table showing the Rainfall in Boston for the year 1872, and the days on which it occurred, from observations by Wm. H. Bradley, Esq., Superintendent of Sewers.

Days.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.22	. . .	. . .	1.32	. . .	.02	. . .	. . .	. . .	. . .	.60	. . .
2	. . .	. . .	. . .	. . .	.08	. . .	. . .	. . .	.02	.05	. . .	.17
3	. . .	. . .	.28	. . .	.56	. . .	. . .	.22	. . .	.20	.10	.06
4	.58	1.46	. . .	. . .	.12	. . .	.72	. . .	. . .	.16	.02	. . .
5	.14	. . .	. . .	. . .	.28	2.54	. . .	. . .	. . .	. . .	. . .	.28
6	. . .	. . .	. . .	. . .	.03	.92	. . .	. . .	. . .	. . .	. . .	. . .
7	. . .	.14	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2.53	. . .
8	. . .	. . .	. . .	.60	. . .	.13	. . .	. . .	. . .	1.85	. . .	. . .
9	. . .	. . .	. . .	.34	. . .	. . .	.28	. . .	. . .	. . .	. . .	.08
10	. . .	. . .	.40	.24	. . .	.05	.24	. . .	. . .	. . .	. . .	. . .
11	. . .	. . .	.86	. . .	.04	. . .	.06	. . .	. . .	.04	. . .	. . .
12	. . .	. . .	. . .	. . .	. . .	.16	. . .	. . .	. . .	. . .	. . .	. . .
13	. . .	. . .	.32	.22	. . .	. . .	.07	. . .	.20	.47	.56	.12
14	. . .	1.06	. . .	. . .	. . .	. . .	. . .	.76	.22	.84	.09	. . .
15	. . .	. . .	.40	. . .	. . .	.54	.03	.60	.12	. . .	.06	. . .
16	. . .	. . .	. . .	.44	. . .	. . .	.42	1.36	3.63	. . .	. . .	. . .
17	.16	. . .	. . .	. . .	. . .	. . .	.02	1.38	. . .	. . .	. . .	.18
18	. . .	. . .	. . .	. . .	. . .	. . .	. . .	.13	.76	.02	. . .	. . .
19	. . .	. . .	. . .	. . .	.80	. . .	.02	. . .	.80	.12	. . .	.43
20	1.01	. . .	. . .	. . .	.02	. . .	. . .	. . .	. . .	. . .	. . .	.84
21	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
22	. . .	. . .	. . .	.08	. . .	. . .	.88	2.08	. . .	. . .	. . .	.12
23	. . .	. . .	. . .	. . .	.31	. . .	.42	. . .	. . .	. . .	.42	.11
24	. . .	. . .	1.14	. . .	.03	. . .	.02	. . .	. . .	. . .	. . .	. . .
25	. . .	. . .	. . .	. . .	.17	.04	. . .	. . .	. . .	. . .	. . .	. . .
26	. . .	.02	. . .	. . .	. . .	.38	.94	. . .	.10	.91	. . .	1.73
27	. . .	. . .	.34	. . .	. . .	. . .	. . .	.10	.96	.17	.08	.44
28	. . .	. . .	. . .	. . .	.83	.03	. . .	. . .	.56	.15	. . .	. . .
29	.32	. . .	. . .	. . .	. . .	. . .	.32	. . .	. . .	. . .	.18	. . .
30	. . .	. . .	. . .	. . .	.10	. . .	. . .	1.93	. . .	. . .	. . .	. . .
31	. . .	. . .	.24	. . .	.58	. . .	.04	1.92	. . .	. . .	. . .	.44
Monthly Totals.	2.43	2.68	3.98	3.24	3.95	4.81	4.48	10.48	7.37	4.98	4.64	5.00

Total for the year . . . . 58.04 inches.

WATER REGISTRAR'S REPORT.

Water Registrar's Office, City Hall,
Boston, May 1, 1873.

Charles H. Allen, Esq.,
President of the Cochituate Water Board: —

Sir, — In accordance with the requirements of the ordinance providing for the care and management of the Boston Water Works, I have the honor to submit the following report for the year 1872: —

The total number of water-takers now entered for the year 1873 is 40,688, being an increase since January 1, 1872, of 1,972.

The total number of cases where the water has been turned off for non-payment of rates during the year is 933. Of this number 751 have been turned on, leaving a balance of 182 still remaining off.

The total amount of water-rates received from April 30, 1872, to May 1, 1873, is		$903,812 67
Less amount paid to the City of Charlestown, as per contract		$52,338 36
		$851,474 31
Of this amount there was received for water used in previous years the sum of .	$50,426 81	
Leaving the receipts for water furnished during the financial year 1872 and 1873, the sum of	$801,047 50	
Amount carried forward,		$851,474 31

Amount brought forward,	$851,474 31
In addition to the above there has been received for turning on water in cases where it had been turned off for non-payment of rates, the sum of . . .	1,570 00
	$853,044 31

The increased amount of income for the financial year ending Apil 30, 1873, over the previous year is	$67,525 58
The total amount of assessments now made for the present year, is	$650,000 00
The estimated amount of income from the sales of water during the year 1873 is .	$875,000 00
The expenditures of my office during the year 1872 are	$22,362 35

The items of this expenditure are as follows: —

Paid for Salaries	$21,498 85
" " Printing	$551 65
" " Stationery	$186 97
" " Horse and Buggy . . .	$123 00
" " Postage Stamps and Advertising .	$1 88
	$22,362 35

METRES.

The total number of metres now applied to the premises of water-takers is 955. Of this number 644 are $\frac{5}{8}$-inch, 264 1-inch, 40, 2-inch, 5, 3-inch, 2, 4-inch size; they are attached to a variety of establishments, embracing hotels, railroads, manufactories, stables, confectionery, oyster saloons, and buildings occupied by several tenants.

The following table exhibits the yearly revenue from the sale of Cochituate water since its introduction into the city October 25th, 1848: —

Received by Water Commissioners, as per Auditor's Report, in 1848	$972 81
From January 1, 1849, to January 1, 1850, .	71,657 79
" " 1850, " 1851, .	99,025 45
" " 1851, " 1852, .	161,052 85
" " 1852, " 1853, .	179,567 39
" " 1853, " 1854, .	196,352 32
" " 1854, " 1855, .	217,007 51
" " 1855, " 1856, .	266,302 77
" " 1856, " 1857, .	282,651 84
" " 1857, " 1858, .	289,328 83
" " 1858, " 1859, .	302,409 73
" " 1859, " 1860, .	314,808 97
" " 1860, " 1861, .	334,544 86
" " 1861, " 1862, .	365,323 96
" " 1862, " 1863, .	373,922 33
" " 1863, " 1864, .	394,506 25
" " 1864, " 1865, .	430,710 76
" " 1865, " 1866, .	450,341 48
" " 1866, " 1867, .	486,538 25
" " 1867, " 1868, .	522,130 93
" " 1868, " 1869, .	553,744 88
Amount carried forward,	$6,292,901 96

Amount brought forward,	$6,292,901 96
From January 1, 1869, to January 1, 1870, .	597,328 55
" " 1870, " 1871, .	708,783 68
" " 1871, " 1872, .	774,445 70
" " 1872, " 1873, .	806,102 51
" " 1873, to May 1, 1873, .	625,822 82
	$9,805,385 22

Statement showing the number of houses, stores, steam engines, etc., in the City of Boston, supplied with Cochituate water to the 1st of January, 1873, with the amount of water-rates paid for 1872: —

25,511	Dwelling-houses	$408,651 02
10	Boarding-houses	527 00
703	Model-houses	19,307 85
9	Lodging-houses	376 00
14	Hotels	995 58
5,286	Stores and Shops	55,641 79
411	Buildings	16,721 90
566	Offices	4,530 28
26	Printing-offices	435 83
24	Banks	371 05
34	Halls	468 51
1	Museum	36 50
31	Private Schools	559 17
16	Asylums	979 38
4	Hospitals	170 00
35	Greenhouses	493 50
90	Churches	1,244 51
4	Markets	816 00
134	Cellars	910 50
662	Restaurants and Saloons . .	13,490 15
	Amount carried forward,	$526,726 52

	Amount brought forward,	$526,726	52
7	Club-houses	202	00
2	Bath-houses	67	50
37	Photographers	1,173	50
11	Packing-houses	477	17
1445	Stables	11,550	15
26	Factories	1,000	50
8	Bleacheries	144	00
1	Brewery	109	00
2	Beer Factories	93	97
95	Bakeries	746	34
1	Boat-house	49	00
10	Freight-houses	209	00
3	Gasometers	41	33
4	Ship-yards	58	00
2	Dry docks and engines	50	00
66	Shops and engines	3,035	34
32	Stores “ “	1,945	40
14	Factories “	885	68
6	Printing “	387	18
3	Bakeries “	108	00
2	Ship-yards “	70	00
10	Buildings “	732	12
1	Mill “	76	36
1	Packing-house “	78	00
10	Stationary engines	1,002	03
63	Hoisting and Pile-driving engines	759	00
15	Armories	181	58
71	Hand-hose	390	00
11	Fountains	140	00
42	Tumbler-washers	625	00
56	Water-pressures	279	17
3	Laundries	75	00
	Amount carried forward,	$553,467	84

	Amount brought forward,	$553,467 84
2	Commercial Colleges	64 00
1	Laboratory	50 00
	Custom-house	150 00
3	Branch Post-offices	39 00
1	Lockup	6 25
	Fitting Gasometers	315 27
	Fitting Cistern	18 00
	Steam-dredging Machine	50 00
	Suffolk Street District	227 40
1	Ice Company (washing ice)	30 00
71	Steamboats	13,308 70
	Office (City Scales)	11 00
	Probate building	75 00
	House of Reception	10 00
31	Fire-engines, hose and H. & L. houses	680 00
2,389	Fire-hydrants	43,002 00
96	Reservoirs	1,728 00
371	Public Schools	3,000 00
	City Stables	203 75
	Washing-carts	125 00
	Offal Station	225 00
	Steamer "Henry Morrison"	200 00
	Faneuil Hall	40 00
	Public Library	50 00
	" " East Boston Branch	19 50
	Paving Department Shop and Stable	27 00
	Common Sewer Department	250 00
	Deer Park	10 00
	Public Urinals	110 00
	Street Sprinkling	500 00
	Public Garden	25 00
	Drinking-fountains	750 00
	Building purposes	4,741 87
	Metered water (9 months)	182,592 93
		$806,102 51

Statement showing the number and kind of Water Fixtures contained within the premises of Water-takers in the City of Boston to January 1, 1873, as compared with previous years.

1870.	1871.	1872.	
5,893	6,041	6,452	Taps. These have no connection with any drain or sewer.
53,010	58,946	64,454	Sinks.
23,961	27,856	30,632	Wash-hand basins.
8,013	9,130	10,289	Bathing-tubs.
11,319	13,077	14,863	Pan water-closets.
12,235	14,104	14,891	Hopper water-closets.
250	241	278	" " " pull.
216	258	213	" " " self-acting.
433	434	503	" " " waste.
607	619	602	" " " door.
2,447	2,470	2,755	Urinals.
9,615	10,743	11,826	Wash-tubs. These are permanently attached to the building.
879	741	714	Shower-baths.
13	1	0	Hydraulic rams.
547	468	445	Private hydrants.
723	578	641	Stop-hoppers.
73	79	96	Foot-baths.
128,234	145,786	159,654	

Respectfully submitted,

WM. F. DAVIS,

Water Registrar.

REPORT OF THE SUPERINTENDENT OF THE EASTERN DIVISION COCHITUATE WATER WORKS, 1872.

Boston, May 1st, 1873.

Chas. H. Allen, Esq.,
President of the Cochituate Water Board:—

Sir, — I hereby respectfully submit my report for the year ending with April the 30th.

The whole length of main pipes of the different sizes, laid, the past year, as will be seen by the tables below, is 94,046 feet, or nearly eighteen miles.

The number of service pipes is 2,195, measuring 63,266 feet, being 12 miles, less 106 feet.

The lines of pipes on Bradley's Hill, 40 inches, 36 inches, and 30 inches in diameter, measuring in all 2,348 feet, were successfully lowered to an average depth of 3 feet early in the year. The necessity of lowering these lines was the cutting down of the hill by the town of Brookline. The work of relaying pipes of a larger size in East Boston, for the better supply in case of fire, was completed in good season. The length will be found in the tables below.

The work of establishing gates at proper places, making suitable connection and letting on the water for a high-service supply to South Boston Heights, was completed on July 15.

The laying of pipes, establishing proper gates, and making suitable connections for the use of the Mystic water for the high-service of Beacon Hill, in case of an accident to the pumping works or pipes leading therefrom, was completed in August.

The East Boston and South Boston reservoirs were cleaned in August and September.

A new line of 10-inch pipes, 612 feet in length, was laid over the creek and by the side of Winthrop Bridge, in November. The old line was so exposed as to freeze twice during the winter of '71 and '72. The new line is enclosed by two air-tight boxes, or as near air-tight as could conveniently be made, and although last winter was a severely cold one, we had not the slightest trouble with it.

The experiment of stone troughs attached to the drinking fountains answered the purpose well through the entire season, and I believe gave to the public a satisfaction above all others. Your Board have ordered twenty more of them; a few have been delivered and set; the remainder will be set as soon after I get them as possible. I am sorry they do not come faster, as the old ones have been taken out, and the warm season is near to us. The occasion of their delay is, I suppose, the rebuilding on the "burnt district" monopolizes the most of the granite laborers. I have, however, the promise of more very soon. I think a round trough would be an improvement over the present pattern, for a square, or any locality where teams or cattle can surround it.

I am now establishing the Lowry hydrant wherever new mains are laid or alterations made. I call your attention to what I consider a wicked waste of water at the time of a fire. Most of the reservoirs are fed by a short 4-inch pipe, that is connected directly with the main pipe in street. The reservoirs were constructed before the water works, and fed from the roofs of buildings and other sources, consequently they were made with an outlet, the hole being about eight inches. When the water is let on by the firemen, the water rises in the reservoir to the outlet, and then escapes unseen through the eight-inch hole. You can readily imagine how much water is thus wasted, and at a time when it is most needed. I have a number of times called the attention of the Fire Department to this fact, but it has not been heeded that I know of.

I would ask your attention to what I consider a very important part of this report. Ever since my connection with the Cochituate Water Works, I have seen the necessity of having a building provided, either by purchase or lease, near our pipe-yard, where a number of our workmen can live, and be near at hand, to be called on in case of an emergency. Let me describe the condition we are in. In case of a breakage in our works at night, or of a Sunday, notice is given by the police to the watch at the yard ; the watchman travels upwards of a mile to the residence of the nearest workman ; he hastens to the point designated. If the break is on the main pipe, he has to travel to the north part of the city, a distance of over two miles, and notify my assistant: He, the assistant, has to send to as many different places as the number of men he wants. Thence all repair to the pipe-yard for tools, thence to the place of the accident. You can readily imagine what damage might occur during all this time, and how much time might be saved, if at the yard workmen could be had at once.

Taken Up.

1,160 feet 6-inch pipe, Sumner street, between Lewis and Border street.

336 feet 6-inch pipe, Lewis street, between Sumner and Marginal street.

1,325 feet 6-inch pipe, Marginal street, between Lewis and Cottage street.

691 feet 6-inch pipe, Clarendon street, between Boylston and Beacon street.

1,032, feet 1½-inch, iron.

115 " 1 " lead.

63 feet $\frac{3}{4}$ inch, lead.
120 “ $\frac{5}{8}$ “ “
46 “ $\frac{1}{2}$ “ “

Lowered.

786 feet 40-inch pipe on Bradley's Hill.
786 “ 36 “ “ “ “ “
786 “ 30 “ “ “ “ “
686 “ 12 “ “ White street, East Boston.
272 “ 6 “ “ Clifford street.

Extended.

$\frac{3}{4}$-inch pipe 11 feet.
$\frac{5}{8}$ “ “ 365 “
$\frac{1}{2}$ “ “ 15 “

Statement of Location, Size, and Number of Feet of Pipe Laid in 1872.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	BOSTON PROPER.		
Haymarket Square . .	Charlestown and Merrimac	20	93
	Total, 20-inch	. . . .	93
Exeter	Beacon and Commonwealth Avenue . . .	16	400
	Total, 16-inch	. . . .	400
Columbus Avenue . .	Clarendon and Chandler	12	150
Gloucester	Marlboro and Commonwealth Avenue . .	“	140
Boylston	Clarendon and Dartmouth	“	150
“	Dartmouth and Exeter	“	274
Cambridge	Lynde and Hancock	“	131
Castle	Tremont and Washington	“	1,177
Tremont	Castle and Dover	“	821
Clarendon	Boylston and Commonwealth Avenue . .	“	525
“	Commonwealth Avenue and Beacon . . .	“	691
High	Hartford and Washington Square	“	461
“	Washington Sq. and Broad	“	372
Summer	Church Green and Washington	“	1,114
	Total, 12-inch	. . . .	6,006
Kirkland	Indiana Place and Pleasant	6	533
Porter	“ “ “	“	618
East Canton	Albany and Harrison Avenue	“	377
Shawmut Avenue . . .	Pleasant and Warrenton	“	235
W. Clarendon	Columbus Avenue and Dartmouth	“	550
“ “	Clarendon Place and Dartmouth	“	147
Commonwealth Avenue North side	Clarendon and Exeter	“	700
Commonwealth Avenue South Side	Dartmouth and Exeter	“	231
	Carried forward	. . . .	3,391

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward	. . . .	3,391
Dartmouth	Newbury and R. R. Bridge	6	100
Fairfield	Marlboro and Exeter	"	150
Claremont Park	Columbus Avenue and Prov. R. R.	"	190
Marlboro	Fairfield and Dartmouth	"	1,000
Bowdoin Square . . .	Green and Bulfinch	"	130
Middlesex	Lucus and Castle	"	95
Emerald	Paul and Castle	"	30
Albion	Chapman and Castle	"	290
Village	" " "	"	170
Shawmut Avenue . . .	" " "	"	227
Chandler	Berkeley and Tremont	"	278
Central whf., So. side .	Across Atlantic Avenue	"	72
Mount Washington Av.	Federal and the Bridge	"	325
Dartmouth	Columbus Avenue and Prov. R. R.	"	103
Clarendon	Boylston and Prov. R. R.	"	487
Sawyer	Shawmut Avenue and Lenox	"	84
Yarmouth	Columbus Avenue and Prov. R. R.	"	36
Oliver	Sturgis and Purchase	"	700
Washington Square . .	Oliver and High	"	358
Hamilton	High and Batterymarch	"	312
Purchase	High and Pearl	"	1,042
Hartford	Purchase and High	"	374
Sturgis	Pearl and Broad	"	500
Newbury	Berkeley and Clarendon	"	90
Sawyer	Winifred Court and Lenox	"	427
	Total, 6-inch	. . . .	$10,961
Ohio Place	Washington and Shawmut Avenue	4	370
Otis Place	From Brimmer	"	96
Buckingham Place . .	From Buckingham	"	192
	Carried forward	. . . .	658

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward		658
Paul	Tremont and Emerald	4	339
Carlton	Newton and Berwick Park	"	72
Lawrence	Dartmouth and Clarendon	"	123
Greenwich Park	Columbus Avenue and Prov. R. R.	"	60
Providence R. R. Yard	From Clarendon	"	66
Preston & Merrill's Yard	From Mount Washington Avenue	"	161
Caznove Place	Columbus Avenue and Prov. R. R.	"	240
	Total 4-inch		1,719

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	SOUTH BOSTON.		
Thomas	Atlantic and Atlantic	12	1,292
Dorchester	Dorchester Avenue and Jenkins	"	1,038
	Total 12-inch		2,330
Second	N and O.	6	284
Third	L. and M.	"	566
Fourth	Atlantic and G	"	477
"	G and H	"	633
"	G and Linden	"	62
Sixth	I and K	"	90
"	Dorchester Avenue and Ontario	"	230
"	H and I	"	186
Seventh	G and H	"	195
"	L and M.	"	390
Ninth	Dorchester and Lowland	"	280
F	First and Second	"	264
G	Seventh and Thomas	"	215
G	Seventh and H	"	290
G	Eighth and Ninth	"	118
M	Third and Broadway	"	370
National	Thomas and Dorchester	"	200
Old Harbor	Eighth and Old Harbor Place	"	100
Storey	Eighth and G	"	232
	Total, 6-inch		5,182
Kimball Court	From P Street	4	180
Cavanaugh Place	From E Street	"	170
Swallow	N and O	"	416
Bowen	Dorchester and F	"	164
	Carried forward		930

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward		930
Ontario	Sixth and Swan	4	233
Mechanic Place	From Eighth Street	"	173
Jay	Fourth and Fifth	"	158
New Lark	Ninth and O. C. & N. R. R.	"	80
Newman	Lowland and Dorchester	"	226
Broadway	Foundry and O. C. & N. R. R.	"	576
Athens	B & B. H. & E. R. R.	"	50
	Total 4-inch		2,426

Statement of Location, Size, etc.— Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	EAST BOSTON.		
Brooks	Bennington and Chelsea	16	629
	Total, 16-inch		629
Sumner	Border and Maverick Square	12	1,160
Lewis	Webster and Marginal	"	336
Marginal	Lewis and Cottage	"	1,325
Chelsea	Marion and Saratoga	"	2,830
	Total, 12-inch		5,651
Winthrop Bridge	East Boston and Winthrop	10	612
	Total, 10-inch		612
Trenton	Putnam and White	6	162
Eagle	Brooks and Meridian	"	440
"	Knox and Putnam	"	100
Saratoga	Prescott and Chelsea	"	180
Prescott	Trenton and Lexington	"	148
Chelsea	Glendon and Byron	"	482
Havre	Bennington and Marion	"	290
Putnam	Lexington and Trenton	"	132
London	Porter and Bennington	"	125
	Total, 6-inch		2,059
Haynes	Orleans and Marginal	4	176
	Total, 4-inch		176

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	BOSTON HIGHLANDS.		
Longwood Avenue . .	Bumstead Lane and Maple Avenue	12	1,738
Brookline	Longwood Avenue and Francis	"	955
Tremont	Philip and Bumstead Lane	"	429
Blue Hill Avenue . . .	Alaska and Wayne	"	916
" " "	Waverly and Woodville Square	"	58
Centre	Old Heath and Armory	"	369
Seaver	Maple and Walnut Avenue	"	389
Day	New Heath and Creighton	"	181
Shawmut Avenue . . .	Codman Avenue and Egleston Square . .	"	801
Ruggles	Belmont and Cabot	"	100
"	Warwick and Tremont	"	640
New Heath	Walden Place and Day	"	89
	Total, 12-inch	. . . .	6,665
Conant	Bumstead Lane and Worthington	9	8
Wigglesworth	Tremont and Longwood Avenue	"	9
Worthington	" " "	"	10
Westminster	Ruggles and Hammond Park	"	33
Windsor	Westminster and Shawmut Avenue . . .	"	13
Warwick	Ruggles and Hammond Park	"	45
Townsend	Warren and Shawmut Avenue	"	35
Bowers	Laurel and Sherman	"	22
Ottawa	" " "	"	12
Circuit	Regent and Shawmut Avenue	"	32
Old Heath	New Heath and Centre	"	32
New Heath	Day and Walden Place	"	13
Woodward Avenue . .	Dudley and George	"	13
Bickford	New Heath and Bromley Park	"	12
Schuyler	Maple and Blue Hill Avenue	"	25
Maple	Schuyler and Seaver	"	24
	Carried forward	. . . .	338

Statement of Location, Size, etc.— Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward		338
Rand	Blue Hill Avenue and Rand Place	9	10
Oriole	From Walnut Avenue	"	9
St. James	Regent and Shawmut Avenue	"	22
Vernon	Cabot and Simmons	"	10
Akron	Regent and Alpine	"	12
Regent	St. James and Fountain	"	24
Tower	Oriole and Llewellyn Avenue	"	9
	Total, 9-inch		434
Winslow	Eustis and Dudley	6	754
Longwood Avenue	Brookline Avenue and Maple Avenue	"	53
Conant	Bumstead Lane and Worthington	"	322
Folsom Place	From Conant	"	234
Wigglesworth	Tremont and Longwood Avenue	"	363
Worthington	" " " "	"	429
Phillips	Tremont and Smith	"	45
Westminster	Ruggles and Hammond Park	"	1,206
Marble	Westminster and Warwick	"	412
Warwick	Ruggles and Hammond Park	"	1,325
"	Ruggles and Marble	"	84
Waverly	Perrin and Blue Hill Avenue	"	142
Townsend	Warren and Shawmut Avenue	"	1,182
Ottawa	Laurel and Sherman	"	766
Fountain	Circuit and Regent	"	14
Riverside	From Tremont	"	236
Catawba	Laurel and Sherman	"	180
Regent	St. James and Circuit	"	547
Circuit	Regent and Walnut Avenue	"	650
Old Heath	New Heath and Centre	"	798
	Carried forward		9,742

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward		9,742
New Heath	Walden Place and Day	6	382
Woodward Avenue	Dudley and George	"	526
Bickford	From New Heath	"	533
Schuyler	Maple and Blue Hill Avenue	"	669
Maple	Schuyler and Seaver	"	759
Albert	Old Heath and Bromley Park	"	92
Whitney	From Tremont	"	176
Cedar	Centre and Pynchon	"	370
Delle Avenue	From Parker	"	112
Rand	Blue Hill Avenue and Rand Place	"	451
Drury Place	From Parker	"	154
Clifford	Warren and Blue Hill Avenue	"	155
Oriole	From Walnut Avenue	"	320
Alpine	St. James and Akron	"	307
St. James	Regent and Shawmut Avenue	"	1,048
Vernon	Cabot and Simmons	"	360
Dennis	Dudley and Huckins Avenue	"	191
Zeigler	Warren and Washington	"	365
Akron	Regent and Alpine	"	611
Tower	Oriole and Llewellyn Avenue	"	346
Llewellyn Avenue	From Walnut Avenue	"	92
Swett	Beyond Hilton	"	830
Hampshire	Ruggles and Culvert	"	47
Cabot	" " "	"	216
Farnham	Reed and Hampden	"	202
Place from Dudley	From Dudley	"	154
Gaston	Warren and Blue Hill Avenue	"	323
	Total, 6-inch		19,533

Statement of Location, Size, etc.— Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
Roxbury Alms House .	From Marcella	4	208
Orchard	From Yeoman	"	109
Ruggles	Cabot and Tremont	"	10
Bickford Avenue . . .	From New Heath	"	430
Fremont and Dayton Av	Mall and Mall	"	352
Longwood Avenue . .	Binney and Brookline Avenue	"	45
Walden Place	From Highland	"	237
Linwood Square . . .	From Linwood	"	230
Fort Avenue	Highland and Beech Glen Avenue	"	312
Highland Park	Beech Glen Avenue and Fort Avenue . .	"	238
Rockville Place	From Warren	"	219
Lagrange Place	From Blue Hill Avenue	"	182
Bromley Park	Bickford and Albert	"	454
Guild	Shawmut Avenue and Lambert Avenue .	"	313
Pevear Court	From Dudley	"	269
Eaton Court	From Cedar	"	441
Sewell Place	From Tremont	"	231
Blanchard Place . . .	Bartlett and Norfolk	"	127
	Total, 4-inch	. . . .	4,407

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	DORCHESTER.		
Bowdoin	Washington and Church	12	2,209
Church	Bowdoin and Adam	"	275
Cottage	Boston and Pleasant	"	708
Harvard	Washington and School	"	942
	Total, 12-inch		4,134
Hamlet	Boston and Berkeley Place	9	8
Berkeley Place	Stoughton and Hamlet	"	7
Clayton	Park and Commercial	"	36
Myrtle	Bird and Quincy	"	25
Centre	Adam and Centre Avenue	"	32
Pleasant	Creek and Commercial	"	17
Commercial	Hancock Street and Dorchester Avenue	"	35
High	Commercial and Highland	"	14
Lincoln	Adams and Dorchester Avenue	"	10
Winter	Adams and Hancock	"	16
Columbia	Washington and Blue Hill Avenue	"	53
New Seaver	Columbia and Erie Avenue	"	27
Michigan Avenue	" " " "	"	36
Elmo	Blue Hill Avenue and Erie Avenue	"	24
Brook Avenue	Cottage and Stoughton	"	22
Parkman	Adams and Dorchester Avenue	"	49
Arcadia	Adams and Draper	"	39
Westville	Arcadia and Draper	"	12
Grant	From Crescent Avenue	"	12
Everett Avenue	From Stoughton	"	11
	Total, 9-inch		485

Statement of Location, Size, etc.— Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
Howard Avenue	Hartford and Howard	6	231
Green	From Bowdoin	"	219
Bellevue	" "	"	16
Hamlet	Boston and Berkeley Place	"	472
Berkeley Place	Stoughton and Hamlet	"	336
Park	Beach and Clayton	"	134
Clayton	Park and Granger	"	969
Bird	Ceylon and Myrtle	"	20
Myrtle	Quincy and Stoughton	"	530
"	Bird and Stoughton	"	1,700
Centre	Adams and Centre Avenue	"	1,180
Pleasant	Creek and Commercial	"	246
Commercial	Hancock and Dorchester Avenue	"	1,551
High	Commercial and Highland	"	417
Lincoln	Adams and Dorchester Avenue	"	400
Winter	Adams and Hancock	"	593
Columbia	Washington and Blue Hill Avenue	"	1,481
New Seaver	Columbia and Erie Avenue	"	645
Michigan Avenue	" " " "	"	873
Elmo	Blue Hill Avenue and Erie Avenue	"	562
Erie Avenue	Elmo and Michigan Avenue	"	234
Brook Avenue	Cottage and Stoughton	"	811
Parkman	Adams and Dorchester Avenue	"	1,351
Arcadia	Adams and Draper	"	833
Draper	Arcadia and Robinson	"	346
Westville	Arcadia and Draper	"	228
Grant	From Crescent Avenue	"	315
Everett Avenue	From Stoughton	"	470
Fox Avenue	Adams and Percival Avenue	"	355
East	Winter and Highland	"	650
	Carried forward	. . . .	18,168

Statement of Location, Size, etc. — Continued.

In what Street.	Between what Streets.	Diameter of Iron Pipe in Inches.	Feet of Pipe.
	Brought forward	. . . .	18,168
East	Winter and Dorchester Avenue	6	322
Howard	Myrtle and Howard	"	511
	Total, 6-inch	. . . .	19,001
Myrtle Place	From Myrtle	4	229
Trull	From Hancock	"	657
Oakman	Walnut and Taylor	"	146
	Total, 4-inch	. . . .	1,032

RECAPITULATION.

SECTION.	1872.	DIAMETER IN INCHES.								
		24.	20.	16.	12.	10.	9.	6.	4.	Total.
Boston	Total number of feet laid	....	93	400	6,006	....	....	10,961	1,719	
	Stopcocks in same	1	1	....	11	....	....	45	11	
South Boston	Total number of feet laid	....	....	....	2,330	....	....	5,182	2,426	
	Stopcocks in same	....	....	....	1	....	....	23	13	
East Boston	Total number of feet laid	....	....	629	5,651	612	....	2,059	176	
	Stopcocks in same	....	....	1	7	2	....	13	6	
Boston Highlands	Total number of feet laid	....	....	....	6,665	....	434	19,533	4,407	
	Stopcocks in same	....	....	....	10	....	....	43	17	
Dorchester	Total number of feet laid	....	....	....	4,134	....	485	19,001	1,032	
	Stopcocks in same	....	....	....	5	....	....	32	2	
Brookline	Total number of feet laid	....	....	....	111	....	....	....	....	
	Stopcocks in same	....	....	....	6	....	....	....	....	
	Sums of Pipe	....	93	1,029	24,897	612	919	56,736	9,760	94,046
	Sums of Stopcocks	1	1	1	40	2	....	156	49	250

Statement of the Length of different Sizes of Pipes laid, and the number of Stopcocks put in, to May 1st, 1873.

	DIAMETER OF PIPES IN INCHES.														Aggregate.
	48.	40.	36.	30.	24.	20.	16.	12.	10.	9.	8.	6.	4.	3.	
Feet of Pipe laid in Brookline, Boston Highlands and Boston Proper	7,283	23,166	20,070	26,770	5,773	93	7,476	73,822	. . .	. .	2,020	297,118	92,542	. .	
Number of Stopcocks in same	5	5	8	11	11	3	25	147	. . .	. .	5	660	347	. .	
Feet of Pipe laid in Boston Highlands . . .	. .	. . .	. . .	. . .	7,618	. . .	7,141	61,273	. . .	687	. . .	118,531	25,961	238	
Number of Stopcocks in same	. .	. . .	. . .	1	7	. . .	16	84	. . .	. .	1	237	104	2	
Feet of Pipe laid in South Boston	. .	. . .	. . .	. . .	. . .	13,175	. . .	23,643	. . .	. .	2,871	110,247	35,327	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	5	. . .	35	. . .	. .	2	179	95	. .	
Feet of Pipe laid in East Boston	. .	. . .	. . .	. . .	1,463	15,972	2,152	29,013	9,923	. .	18,584	77,475	5,625	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	8	5	38	3	. .	8	122	40	. .	
Feet of Pipe laid in Dorchester	. .	. . .	. . .	. . .	3,299	3,698	456	60,576	. . .	741	. . .	55,561	2,850	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	3	1	1	68	. . .	. .	. . .	98	17	. .	
Feet of Pipe laid in Newton and Needham	. .	. . .	1,074	2,140	. . .	. . .	. . .	1,359	. . .	. .	. . .	360	. . .	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	. . .	. . .	2	. . .	. .	. . .	2	. . .	. .	
Totals — Length of Pipe laid	7,283	23,166	21,144	28,910	18,153	32,938	17,225	249,686	9,923	1,428	23,475	659,292	162,305	238	1,255,166 feet, equal to 237 miles, 3,806 feet.
Number of Stopcocks put in	5	5	8	12	21	17	47	374	3		16	1,298	603	2	2,411

Statement of Service Pipe laid in 1872.

Diameter in Inches.	BOSTON.		SOUTH BOSTON.		EAST BOSTON.		BOSTON HIGHLANDS.		DORCHESTER.		TOTALS.	
	Number of Pipes.	Length in Feet.	Number of Pipes.	Length in Feet.	Number of Pipes.	Length in Feet.	Number of Pipes.	Length in Feet.	Number of Pipes.	Length in Feet.	Number of Pipes.	Length in Feet.
2	1	50	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	50
1¼	5	285	. . .	. . .	. . .	. . .	1	8	. . .	. . .	6	293
1	16	514	3	93	2	154	10	603	4	511	35	1,875
¾	7	188	2	359	. . .	. . .	6	149	1	21	16	717
⅝	702	17,365	49	1,543	148	9,062	693	18,088	254	7,038	1,846	53,096
½	28	882	53	1,129	33	844	94	2,265	83	2,115	291	7,235
	Aggregate										2,195	63,266
	Making the total number up to May 1st, 1873											37,165

Repairs of Pipes during the Year 1872.

WHERE.	DIAMETER OF PIPES IN INCHES.																				
	48	40	36	30	24	20	16	12	10	8	6	4	3	2	1½	1¼	1	¾	⅝	½	Totals.
Boston	1	2	2	7	1	1	0	13	.	.	36	83	2	9	73	7	52	9	921	28	1,247
South Boston	.	.	.	.	.	.	.	3	.	.	3	3	.	.	.	.	19	.	179	20	227
East Boston	.	.	.	.	.	5	.	2	2	3	.	.	.	.	.	.	.	.	64	5	81
Boston Highlands	.	.	.	2	3	.	.	5	.	.	3	7	.	.	.	.	3	1	56	4	84
Dorchester	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	6	.	8
Totals	1	2	2	9	4	6	.	23	2	3	43	93	2	9	73	7	75	10	1,226	57	1,647

Of the leaks that have occurred in pipes of 4 inches and upwards, joints, 114; settling of earth, 23; defective pipe, 12; defective packing, 2; concussion by falling of walls, 6; struck by bar, 1. Total, 158.

Stoppages by frost, 25; fish, 5. Total, 30.

Of 3 inches and in service pipes, joints, 10; settling of earth, 149; defective pipe, 34; defective packing, 19; defective coupling, 18; defective faucet, 4; coupling loose at main, 7; faucet loose at main, 2; faucet pulled out, 4; faucet broken at main, 6; faucet knocked out, 6; frost, 19; stiff connections, 73; struck by pick, 25; gnawed by rats, 8; pipes not in use, 14; settling of wall, 1; cut by parties unknown, 2; blasting, 1; concussion by falling of walls, 1. Total, 404.

Stoppages by frost in street, 66; frost from inside house, 169; fish, 581; rust, 218; gasket, 16; solder, 3; dirt, 2. Total, 1,055.

Statement of Number of Leaks, 1850–1872.

YEAR.	DIAMETER OF		TOTALS.
	Four Inches and upwards.	Less than four Inches.	
1850	32	72	104
1851	64	173	237
1852	82	241	323
1853	85	260	345
1854	74	280	354
1855	75	219	294
1856	75	232	307
1857	85	278	363
1858	77	324	401
1859	82	449	531
1860	134	458	592
1861	109	399	508
1862	117	373	490
1863	97	397	494
1864	95	394	489
1865	111	496	607
1866	139	536	675
1867	122	487	609
1868	82	449	531
1869	82	407	489
1870	157	769	926
1871	185	1,380	1,565
1872	188	1,459	1,647

HYDRANTS.

During the year 253 hydrants have been established, and 28 abandoned, as follows: —

In Boston proper —	Lowry	17		17
" " "	Wilmarth	47,	abandoned 17	30
South Boston,	"	13,	" 1	12
East Boston —	Lowry	18		18
" "	Wilmarth	7		7
" "	"		abandoned 10	
Boston Highlands —	Lowry	59		59
" "	Wilmarth	17		17
Dorchester —	Lowry	63		63
"	Wilmarth	6		6
Brookline —	Lowry	6		6
		253	28	235
Deducting 10, abandoned in East Boston				10
				225

Total number of Hydrants established up to May 1, 1873.

	May 1st, 1872.	Put in.		Abandoned.	
Boston Proper,	1,058	64	1,122	17	1,105
South Boston,	382	13	395	1	394
East Boston,	221	25	246	10	236
Boston Highlands,	485	76	561		561
Dorchester,	251	69	320		320
Brookline,	3	6	9		9
Charlestown,	11		11		11
Chelsea,	8		8		8
Deer Island	14		14		14
	2,433 +	253 =	2,686 —	28 =	2,658
Total number up to May 1, 1873,					2,658

86 hydrants have been taken out and replaced by new, or repaired ones, and 257 boxes have been taken out and replaced by new ones. The hydrants have had the usual attention paid them.

STOPCOCKS.

250 new stopcocks have been established this year. 127 boxes have been taken out and replaced by new ones.

All the stopcocks have had the attention of former years paid them.

Statement of Pipes and other Stock on hand, exclusive of Tools, May 1, 1873.

	DIAMETER IN INCHES.																
	48	40	36	30	24	20	18	16	12	10	9	8	6	4	3	2	1½
Pipes	.	14	10	58	32	17	3	273	1,304	41	146	24	3,591	881	48	8	.
Blow-off Branches . . .	.	.	3	2	4	.	.	. .	16	.	. .	.	. . .	. . .	.	.	.
Y Branches	.	.	.	1	.	.	.	. .	. . .	.	. .	1	3	. . .	.	.	.
4 Way Branches	.	2	2	2	6	5	.	12	24	.	. .	6	8	1	.	.	.
3 Way Branches	.	7	2	6	13	12	.	1	121	6	149	3	63	25	3	.	.
Flange Pipe	.	2	1	1	1	.	.	2	. . .	.	. .	.	. . .	26	.	.	.
Sleeves	5	4	12	7	5	8	1	21	11	10	. .	10	42	64	12	12	.
Clamp Sleeves	.	.	9	14½	2	.	.	13½	4	.	. .	.	18	12	.	.	.
Caps	.	2	1	2	2	.	.	6	13	.	. .	7	56	48	.	.	.
Reducers	.	3	2	. .	5	4	.	4	9	.	. .	3	41	10	.	.	.
Bevel Hubs	.	.	.	. .	.	.	.	. .	. . .	6	. .	.	1	4	.	.	.
Curve Pipes	.	1	3	22	8	3	.	8	4	.	. .	1	14	11	.	.	.
Quarter Turns	.	.	2	. .	3	4	.	3	14	2	. .	.	39	13	7	4	.
Double Hubs	.	.	.	. .	.	3	.	8	. . .	.	. .	.	9	. . .	.	2	40
Offset Pipes	.	.	.	. .	.	.	.	. .	4	.	. .	.	27	19	.	.	.
Yoke Pipes	.	.	.	. .	.	.	.	. .	6	.	. .	.	9	5	.	.	.
Manhole Pipes	.	2	.	2	.	.	.	. .	. . .	.	. .	.	. . .	. . .	.	.	.
One-eighth Turns	.	.	.	. .	3	.	.	. .	26	.	. .	.	10	30	.	.	.
Pieces of Pipes	.	4	2	13	4	17	.	5	4	.	7	.	. . .	43	8	.	.
Blow-offs and Manholes .	.	1	.	1	.	.	.	. .	. . .	.	. .	.	. . .	. . .	.	.	.
Plugs	.	.	.	. .	.	.	.	. .	. . .	.	. .	.	. . .	6	8	.	.
Thawing Clamps	.	.	.	. .	.	.	.	. .	10	.	. .	.	. . .	25	14	.	.
Stopcocks	.	1	1	4	2	3	.	3	10	.	. .	1	. . .	74	54	.	.

Hydrants. — 56 Lowry, 27 Lowry extensions, 3 Lowry chucks, 48 Lowry frames and covers, 4 Lowry barrels, 12 Lowry caps, 10 round covers, 35 Wilmarth, 1 Wilmarth and 16 Lowell (old), 1 wharf hydrant.

For Hydrants. — 26 bends, 41 lengtheners, 49 covers, 86 wastes, 21 nipples, 16 socket nuts, 42 rods, 10 wharf hydrant cocks, 75 brass tubes, 40 nuts, 50 stuffing boxes, 26 valve seats, 42 rubber valves, 25 leather rings, 32 screws, 16 heavy frames and covers, 47 frames, 73 covers, 2,898 pounds iron castings, 61 pounds composition ditto, 72 pairs straps, 21 pounds Babbitt metal.

For Stopcocks. — 2 36-inch screws, 3 30-inch ditto, 3 24-inch ditto, 2 20-inch ditto, 1 16-inch ditto, 1 4-inch ditto, for waste wire, 1 ditto for Brookline reservoir (old), 45 composition screws for 4-inch gates, 1 16-inch check valve, 19 6-inch valves, 52 6-inch rings, 59 4-inch ditto, 60 6-inch stuffing boxes, 23 4-inch ditto, 9,292 pounds iron casting for 6-inch gates, 5 frames, 5 covers.

Meters in Shop. — 3 3-inch, 10 2-inch, 13 1-inch, 136 $\frac{5}{8}$-inch.

Stock for Meters. — 5 2-inch nipples, 3 1-inch ditto, 30 $\frac{5}{8}$-inch ditto, 2 2-inch connection pieces, 8 1-inch ditto, 12 $\frac{5}{8}$-ditto, 46 1-inch cocks, 18 $\frac{5}{8}$-inch ditto, 1 4-inch clock, 1 3-inch ditto, 1 2-inch ditto, 10 1-inch ditto, 25 $\frac{5}{8}$-inch ditto, 8 brass spindles, 65 rubber nipples, 13 fish boxes, 12 covers, 9 glasses, 58 composition nipples unfinished.

For Service Pipe. — 4 3-inch union cocks, 94 1-inch ditto, 119 $\frac{3}{4}$-inch ditto, 1,350 $\frac{5}{8}$-inch ditto, 78 $\frac{1}{2}$-inch ditto, 39 1-inch air cocks, 32 1-inch T cocks, 47 $\frac{3}{4}$-inch ditto, 35 $\frac{5}{8}$-inch ditto, 55 $\frac{5}{8}$-inch Y cocks, 48 $\frac{5}{8}$-inch thawing cocks, 18 2-inch tubes, 96 $1\frac{1}{4}$-inch ditto, 74 1-inch ditto, 711 $\frac{5}{8}$-inch ditto, 15 $\frac{3}{4}$-inch ditto, 282 $\frac{1}{2}$-inch ditto, 24 2-inch nuts, 32 $\frac{3}{4}$-inch ditto, 18 2-inch couplings, 46 1-inch ditto, 60 $\frac{3}{4}$-inch ditto, 227 $\frac{5}{8}$-inch ditto, 300 $\frac{1}{2}$-inch ditto, 65 $\frac{5}{8}$-inch thawing couplings, 2,000 boxes, 44 T ditto, 30 Y ditto, 116 extension tubes, 2,200 tubes, 200 caps, 1,012 pounds unfinished composition castings 2 4 x 2 composition reducers, 9 3 x 2 ditto, 44 2 x $\frac{5}{8}$ inch ditto, 2 4-inch tunnel pipe, 7 3 x 2 iron reducers with 2-inch composition nipples, 41 1-inch plugs, 66 $\frac{3}{4}$-inch ditto, 81 $\frac{5}{8}$-inch ditto.

Lead Pipe. — 1,894 pounds 2-inch lead pipe, 3,080 pounds 1½-inch ditto, 1,225 pounds 1¼-inch ditto, 3,458 pounds 1-inch ditto, 4,228 pounds ¾-inch ditto, 28,175 pounds ⅝-inch ditto, 3,068 pounds ½-inch ditto, 1,291 pounds 1-inch tin lined ditto, 2,494 pounds ⅝-inch ditto, 742 pounds ½-inch ditto, 200 pounds ⅝-inch block tin pipe, 75 pounds solder, 455 pounds sheet lead.

Blacksmith Shop. — 1,300 pounds round iron, 860 pounds flat ditto, 100 pounds square ditto, 800 pounds working pieces, 400 pounds cast steel, 19 dozen pick blanks, 6,000 pounds Cumberland coal.

Carpenter's Shop. — 147 Lowry hydrant boxes, 5 ditto, unfinished, 168 stopcock boxes, 19 unfinished ditto, 84 hydrant boxes, 84 ditto unfinished, 2 meter boxes, 16 ditto unfinished, 1,200 pounds spikes and nails, 37,000 feet 2-inch spruce plank, 6,000 feet 1½-inch spruce batting, 35 1 foot pieces for raising hydrant boxes, 25 1 foot ditto, for stopcock boxes, 30 ditto for Lowry hydrant boxes, 60 feet hard wood plank.

Tools. — 1 steam engine, 1 large hoisting crane, 3 boom derricks, 6 hand geared derricks, 5 sets shears and rigging for same, 6 tool houses, 3 tool boxes, 2 platform scales, 1 portable blacksmith shop, 1 portable covering for Brewer fountain, 1 hand-roller, 1 horse ditto, tools for laying main and service pipes, 2 engine lathes, 1 foot ditto, 1 hand ditto, 1 Pratt and Whitney taper ditto, 1 chain hoisting gear, 1 upright drilling machine, 3 grindstones, 1 trip hammer, the necessary tools for carrying on the machine, blacksmith, carpenter and plumbing shops, 1 circular saw, 1 fan blower, 1 40-inch proving press, 1 36-inch ditto, 1 small ditto, 4 wheelbarrows, 400 feet old hose. Also a lot of patterns at the foundries where we obtain castings.

Stable. — 11 horses, 8 wagons, 3 buggies, 6 pungs, 1 sled, 1 cart, 12 sets harness, 22 blankets, 1 buffalo robe, 2 sleighs, 3 tons English hay, 80 bushels grain, 1½ tons straw.

Beacon Hill Reservoir. — 1 large composition cylinder, 16-inch jet, 1 6-inch composition jet, 3 composition plates, 9 cast-iron plates, 2 4-inch composition jets, 5 swivel pipe patterns, 1 2-inch copper straight jet, 6 composition jets for small fountains, 6 large composition cylinders.

Miscellaneous. — 64 tons pig lead, 10 gallons linseed oil, 2 barrels kerosene oil, 150 tons furnace coal, 1 freight gravel, 1,000 paving brick, 110 pounds lead washers, lot of paving stones, 52 reservoir covers, 40 cords of wood, 6 manholes, 5 plates, lot of old lumber. Also old machinery from Marlboro.

Respectfully submitted,
E. R. JONES,
Sup't Eastern Division.

REPORT OF THE SUPERINTENDENT OF THE WESTERN DIVISION.

Office Superintendent Western Division,
Brighton, May 1st, 1873.

Charles H. Allen, Esq.,
President of the Cochituate Water Board: —

Sir, — In compliance with the rules of the Water Board, the following report is submitted: —

LAKE COCHITUATE.

Work was commenced April 15th, 1872, to connect Farm Pond and the Sudbury River, with the lake. The work was completed, and the water turned into the lake, the 25th of June. Beaver Brook was cleaned out, made deeper and wider from the Walker mill privilege to the intersection of the trench dug from Farm Pond; length of trench about four miles, one mile required to be close-sheeted with 2-inch plank. Three flumes were built, and two stone culverts, under the town roads; two dams, one at the inlet of Farm Pond, and one on the Sudbury River, a short distance below the bridge of B., C. & F. R. R. The work was done under the direction of J. P. Davis, Esq., City Engineer. The water was run through the trench from June 25th until September 17th; the stop planks were then put in, and no water has been run into the lake from that time. From May 28th to June 1st, 1872, the water in the lake was 4 feet 10 inches above the bottom of the conduit This was the lowest point reached during the year; it gradually rose, and on the 15th of November it stood at 13 feet 1 inch. Orders were then given to keep it down to 12 feet 6 inches, and it was held near that point during the winter, and on April 30th, 1873, it was 13 feet 1 inch. The number of days that the water has run to waste will be shown in the report of the City Engineer. The engines and pumps have been removed, and stored; the gate-house repaired, and cleaned; the usual attention given to the grounds and fences connected with the lake. I would call your attention to the house occupied by the attendant; as it would not be economy to repair it, I would recommend that a new house be built, in a more favorable location for health, or, if built on the site of the present one, that it be raised, at least, three feet, so as to obtain more perfect drainage.

CONDUIT.

The water has been drawn off from the conduit twice during the year, October 12th and 13th, to make the annual examination, which occupied two days. A very thorough examination was made, in company with the City Engineer, Clerk of the Board (and for three miles with some members of the Board). The section between the gate-house and the waste weir at Dedman's Brook was found very foul, being covered with a vegetable growth, and a great deal of sand on the bottom of the conduit, that was carried in by the pumps; from Dedman's Brook to the Chestnut Hill Reservoir it was quite clean; no new cracks were discovered, and no apparent change in the old ones. Measurements were taken by the City Engineer to see if the conduit had settled, so as to change its shape to any extent. It was found to be in a very good condition. October 25th, the water was drawn off and kept off for four days, and the section that required to be cleaned was attended to. The waste weirs are all in order; the doors and gratings will require painting during the season, to keep them so.

CHESTNUT HILL RESERVOIR.

Everything connected with the reservoir is in order; the gate-houses have been cleaned of the rust and cement that covered the stone-work, and the joints repointed where it was needed; stop-plank have been made for the effluent gate-house, to be used should they be required, until suitable gates can be made and put in, as recommended by the City Engineer. There has been no occasion to shut off the water, or to make any change in the gates the past year. The variation of the water was three feet; highest point, 24 feet; lowest, 21 feet. The embankments are all in good order; no appearance of any leak has ever been seen. The bank on the west side of the Lawrence basin has been graded and improved; the two ledges that were left above the level of high water in the Bradlee basin have been taken down, so as to be covered with a depth of twenty inches at high water. The drive-way has not had any repairs on it; no suitable material can be obtained in this vicinity, and I would recommend starting the crushing-machine, and dress the drive-way with stone crushed very fine, as there is an abundance of material at hand; the expense would not differ much from the cost of gravel.

BROOKLINE RESERVOIR.

This reservoir has received the usual care and attention. The wall and fence on Dudley street have been completed and painted. The arrangements were made to clean this basin in November, and the water was drawn down for that purpose, when the fire of November 9th occurred, and it was not thought advisable to do it. The basin was filled again, and connected with the supply. Annexed, will be found the height of water at the Bradlee basin during the year, also the account of tools, etc.

Respectfully submitted,

A. STANWOOD,

Sup't Western Division.

Height of Water at the Bradlee Basin, above the lower floor, at the Effluent Gate-House.

DATE.	Height of Water.	DATE.	Height of Water.	DATE.	Height of Water.
1872.	*Ft. In.*	1872.	*Ft. In.*	1872.	*Ft. In.*
May 1	23 4½	June 1	23 5½	July 1	23 2
" 2	23 5	" 2	23 4½	" 2	23 1½
" 3	23 5½	" 3	23 5	" 3	23 0¾
" 4	23 6	" 4	23 5	" 4	23 0
" 5	23 6½	" 5	23 4½	" 5	23 0½
" 6	23 7	" 6	23 5½	" 6	23 0¼
" 7	23 7½	" 7	23 6½	" 7	22 11½
" 8	23 7¾	" 8	23 7	" 8	22 11
" 9	23 8	" 9	23 6	" 9	22 11
" 10	23 8	" 10	23 6	" 10	22 10¼
" 11	23 8	" 11	23 6	" 11	22 10
" 12	23 8	" 12	23 5½	" 12	22 9½
" 13	23 8¼	" 13	23 5	" 13	22 9
" 14	23 8	" 14	23 4½	" 14	22 8½
" 15	23 7¾	" 15	23 4½	" 15	22 8½
" 16	23 7½	" 16	23 4	" 16	22 8¼
" 17	23 7¼	" 17	23 3½	" 17	22 8¾
" 18	23 6¾	" 18	23 3½	" 18	22 6¼
" 19	23 5½	" 19	23 3½	" 19	22 6½
" 20	23 5	" 20	23 4	" 20	22 6¾
" 21	23 6	" 21	23 3½	" 21	22 7
" 22	23 5½	" 22	23 3	" 22	22 7
" 23	23 6	" 23	23 2	" 23	22 7¾
" 24	23 6	" 24	23 2	" 24	22 8
" 25	23 5½	" 25	23 2	" 25	22 8¼
" 26	23 6	" 26	23 3½	" 26	22 8¼
" 27	23 6	" 27	23 3½	" 27	22 9
" 28	23 6¼	" 28	23 3	" 28	22 9¼
" 29	23 6	" 29	23 2	" 29	22 9¾
" 30	23 6	" 30	23 1¾	" 30	22 10
" 31	23 6	. . . .	. . . . . .	" 31	22 9¾

Height of Water at the Bradlee Basin. — Continued.

DATE.	Height of Water.	DATE.	Height of Water.	DATE.	Height of Water.
1872.	*Ft. In.*	1872.	*Ft. In.*	1872.	*Ft. In.*
August 1 . . .	22 9¾	September 1 . . .	23 8	October 1 . . .	23 11½
“ 2 . . .	22 10	“ 2 . . .	23 8	“ 2 . . .	23 11½
“ 3 . . .	22 10	“ 3 . . .	23 8	“ 3 . . .	23 11¼
“ 4 . . .	22 10½	“ 4 . . .	23 7¾	“ 4 . . .	23 11¼
“ 5 . . .	22 11	“ 5 . . .	23 7½	“ 5 . . .	23 11¼
“ 6 . . .	22 11	“ 6 . . .	23 7½	“ 6 . . .	23 11¼
“ 7 . . .	22 10¾	“ 7 . . .	23 7½	“ 7 . . .	23 11¼
“ 8 . . .	22 10½	“ 8 . . .	23 7	“ 8 . . .	24 0
“ 9 . . .	22 10½	“ 9 . . .	23 7½	“ 9 . . .	24 0
“ 10 . . .	22 10	“ 10 . . .	23 7¼	“ 10 . . .	23 11¾
“ 11 . . .	22 10	“ 11 . . .	23 7	“ 11 . . .	23 11½
“ 12 . . .	22 10¼	“ 12 . . .	23 7	“ 12 . . .	23 8
“ 13 . . .	22 10¼	“ 13 . . .	23 6¾	“ 13 . . .	23 2
“ 14 . . .	22 10¼	“ 14 . . .	23 7	“ 14 . . .	22 11
“ 15 . . .	23 0	“ 15 . . .	23 6½	“ 15 . . .	23 1
“ 16 . . .	23 0	“ 16 . . .	23 8	“ 16 . . .	23 1½
“ 17 . . .	23 2	“ 17 . . .	23 10	“ 17 . . .	23 2
“ 18 . . .	23 3¼	“ 18 . . .	23 10½	“ 18 . . .	23 2½
“ 19 . . .	23 3¼	“ 19 . . .	23 11	“ 19 . . .	23 3¼
“ 20 . . .	23 3½	“ 20 . . .	24 0	“ 20 . . .	23 4
“ 21 . . .	23 3¼	“ 21 . . .	23 11¾	“ 21 . . .	23 5
“ 22 . . .	23 3¼	“ 22 . . .	23 11	“ 22 . . .	23 5¼
“ 23 . . .	23 6	“ 23 . . .	23 11½	“ 23 . . .	23 5½
“ 24 . . .	23 6	“ 24 . . .	23 11¼	“ 24 . . .	23 6
“ 25 . . .	23 5¾	“ 25 . . .	23 11¼	“ 25 . . .	23 5½
“ 26 . . .	23 6	“ 26 . . .	23 11	“ 26 . . .	23 4½
“ 27 . . .	23 6	“ 27 . . .	23 11	“ 27 . . .	23 2
“ 28 . . .	23 5¾	“ 28 . . .	24 0¼	“ 28 . . .	22 10½
“ 29 . . .	23 5½	“ 29 . . .	24 0	“ 29 . . .	22 5½
“ 30 . . .	23 6¼	“ 30 . . .	24 0	“ 30 . . .	22 1
“ 31 . . .	23 8	. . . .	. . . . . .	“ 31 . . .	22 0

Height of Water at the Bradlee Basin. — Continued.

DATE.	Height of Water.	DATE.	Height of Water.	DATE.	Height of Water.
1872.	*Ft. In.*	1872.	*Ft. In.*	1873.	*Ft. In.*
Nov. 1 . . .	22 1½	December 1 . . .	22 1	January 1 . . .	22 0
" 2 . . .	22 3	" 2 . . .	22 0½	" 2 . . .	21 11¼
" 3 . . .	22 5	" 3 . . .	22 1	" 3 . . .	21 10¼
" 4 . . .	22 7	" 4 . . .	22 1¼	" 4 . . .	21 10¼
" 5 . . .	22 8¼	" 5 . . .	22 1½	" 5 . . .	21 10
" 6 . . .	22 10	" 6 . . .	22 2	" 6 . . .	22 0½
" 7 . . .	23 0	" 7 . . .	22 2½	" 7 . . .	22 0
" 8 . . .	23 3¼	" 8 . . .	22 3½	" 8 . . .	22 0
" 9 . . .	23 4	" 9 . . .	22 4½	" 9 . . .	22 0
" 10 . . .	23 1½	" 10 . . .	22 5¾	" 10 . . .	22 0
" 11 . . .	23 1	" 11 . . .	22 5	" 11 . . .	21 11½
" 12 . . .	23 0	" 12 . . .	22 5	" 12 . . .	21 10½
" 13 . . .	22 10	" 13 . . .	22 5	" 13 . . .	21 10
" 14 . . .	22 8	" 14 . . .	22 5	" 14 . . .	21 9
" 15 . . .	22 6	" 15 . . .	22 5¼	" 15 . . .	21 9
" 16 . . .	22 4	" 16 . . .	22 5½	" 16 . . .	21 8¼
" 17 . . .	22 3	" 17 . . .	22 5¾	" 17 . . .	21 9
" 18 . . .	22 2	" 18 . . .	22 6	" 18 . . .	21 11
" 19 . . .	22 0½	" 19 . . .	22 6½	" 19 . . .	22 0
" 20 . . .	21 11½	" 20 . . .	22 7½	" 20 . . .	22 0
" 21 . . .	21 10½	" 21 . . .	22 8½	" 21 . . .	21 11½
" 22 . . .	22 0	" 22 . . .	22 9	" 22 . . .	22 0
" 23 . . .	22 0	" 23 . . .	22 9¼	" 23 . . .	22 0
" 24 . . .	22 0	" 24 . . .	22 9	" 24 . . .	22 0
" 25 . . .	22 0	" 25 . . .	22 8	" 25 . . .	22 0¼
" 26 . . .	21 11½	" 26 . . .	22 6	" 26 . . .	22 0¼
" 27 . . .	21 11½	" 27 . . .	22 6	" 27 . . .	22 0¼
" 28 . . .	21 11½	" 28 . . .	22 4½	" 28 . . .	22 0¼
" 29 . . .	21 11¾	" 29 . . .	22 2½	" 29 . . .	22 0¼
" 30 . . .	22 0½	" 30 . . .	22 2	" 30 . . .	21 11
. . . .	. . . . . .	" 31 . . .	22 0½	" 31 . . .	21 11

Height of Water at the Bradlee Basin. — Continued.

DATE.	Height of Water.	DATE.	Height of Water.	DATE.	Height of Water.
1873.	*Ft. In.*	1873.	*Ft. In.*	1873.	*Ft. In.*
Feb. 1	21 8¾	March 1	21 1	April 1	21 11½
" 2	21 8¼	" 2	21 1	" 2	22 0
" 3	21 8	" 3	21 1	" 3	22 0½
" 4	21 7	" 4	21 1½	" 4	22 1½
" 5	21 7	" 5	21 1	" 5	22 2
" 6	21 6¾	" 6	21 0	" 6	22 2½
" 7	21 6½	" 7	21 0	" 7	22 3½
" 8	21 7½	" 8	21 0	" 8	22 4
" 9	21 7½	" 9	21 0	" 9	22 4¼
" 10	21 7½	" 10	21 0	" 10	22 5
11	21 6½	" 11	21 0	" 11	22 5½
" 12	21 5½	" 12	21 1	" 12	22 6
" 13	21 5	" 13	21 1	" 13	22 7½
" 14	21 4½	" 14	21 1¼	" 14	22 9½
" 15	21 4	" 15	21 0½	" 15	22 10
" 16	21 3½	" 16	21 2½	" 16	22 10½
" 17	21 4½	" 17	21 3	" 17	22 10¾
" 18	21 4½	" 18	21 3	" 18	22 11½
" 19	21 4½	" 19	21 3¼	" 19	23 0
" 20	21 4½	" 20	21 3¾	" 20	23 0¾
" 21	21 4¼	" 21	21 5½	" 21	23 1½
" 22	21 5	" 22	21 6	" 22	23 2
" 23	21 5	" 23	21 6	" 23	23 2
" 24	21 4½	" 24	21 6½	" 24	23 2
" 25	21 3	" 25	21 7	" 25	23 2
" 26	21 2	" 26	21 7¼	" 26	23 2
" 27	21 1	" 27	21 7½	" 27	23 2
" 28	21 1	" 28	21 8	" 28	23 2¼
		" 29	21 8	" 29	23 2¼
		" 30	21 10	" 30	23 2¼
		" 31	21 11		

Schedule of Property at Chestnut Hill Reservoir.

1	two-horse express-wagon.
1	single horse express-wagon.
1	water cart, with shafts.
2	two-horse water carts (new).
2	“ “ “ (old).
2	“ iron rollers.
8	new castings for rollers.
1	single horse pung.
1	two “ “
1	horse truck.
1	“ power.
1	hay wagon.
2	hand carts.
1	ox sling.
1	pair large wheels.
3	clay mills and shafting.
1	large water cistern.
1	stone drag.
6	screens.
40	ox-tie chains.
2	7-inch rotary pumps.
2	4 “ “ “
2	Joyce force, “
1	house pump.
1	steam engine.
1	stone-crushing machine and castings.
2	blacksmith's forges and tools.
1	derrick and rigging.
4	clay knives.
4	grub axes.
90	picks.
48	shovels.

6 spades.
11 long-handle spades.
6 new snow shovels.
3 hoes.
35 iron bars.
7 stone hammers.
6 striking hammers.
13 iron rakes.
7 scuffling hoes.
3 border knives.
1 root-puller.
1 pair grass shears.
5 scythes and snaiths.
13 wooden rakes.
11 wooden pails.
3 lawn-mowers.
1 garden engine.
4 hay forks.
9 lanterns.
4 reflector lanterns.
1 large reflector lantern.
8 peat knives.
22 tin dippers.
23 " candlesticks.
11 barrels cement.
11 long drills.
23 short "
9 wooden rammers.
2 grindstones.
3 jack screws.
chains.
4 pieces rubber hose.
2 " belting.
2 whitewash brushes.
6 paint brushes.

1 wooden brush.
1 wood saw.
10 ice chisels.
3 ice saws.
1 cross-cut saw.
3 telegraph batteries.
1 set scales and weights.
1 rain gauge.
75 feet 4-inch flange pipe.
36 “ 8 “ “ “
1 12-inch quarter turn.
12 feet 18-inch Scotch pipe.
30 “ 15 “ “ “
15 “ 30 “ cement pipe.
5 “ 9 “ “ “
2 horses, 2 harnesses.
1 Concord wagon.
1 covered “
1 carryall.
5 stoves.
1 safe.

At Brookline Reservoir.

1 stove and funnel.
2 settees.
2 lamps.
1 spittoon.
2 shovels.
1 hay rake.
1 iron rake.
1 pick.
1 border knife.
1 pail.
2 ladders.
1 coal hod.

1 broom.
2 floor mats.
1 scythe and snaith.
1 basket.
1 desk.
1 oil can.

Schedule of Property at South Framingham.

102 shovels.
20 long-handle spades.
16 stone hammers.
15 axes.
15 wheelbarrows.
85 picks.
31 grub axes.
4 stoves.
4 chains.
70 pair rubber boots (poor).
7 sounding rods.
1 grindstone.
1 step ladder.
1 rain gauge.
1 camp tent and utensils.
3 bed springs.
8 blankets.
7 mattresses.
6 bolsters.
17 pillows.
3 brooms.
1 brace and bitts.
2 hand saws.
1 screw driver.
1 chisel.
8 lanterns.
4 oil cans.

1 wash stand.
1 wash bowl.
1 water jar.
1 mirror.
6 tin dippers.
1 hatchet.
1 set blocks and falls.
lot ropes.
7 crowbars.
4 drag ropes.
5 augers.
3 ladders.
4 nail hammers.
1 timber roller.
4 pair stop plank hooks.
1 cart hook.
4 scrubbing brushes.
1 boat.
3 pair handcuffs.
1 map South Framingham.

Schedule of Property at Lake Cochituate.

1 extension table.
1 parlor table.
18 dining-room chairs.
1 wash bowl.
1 mirror.
1 cooking range.
2 settees.
1 horse.
1 carryall.
1 express wagon.
1 cart.
1 cart harness.
2 single harnesses.

1 buffalo robe.
1 pung.
1 rain gauge.
1 pair steel yards.
1 dung fork.
2 hay forks.
4 hay rakes.
2 iron-rakes.
6 hoes.
3 dung hoes.
6 picks.
5 iron bars.
4 ox chains.
1 grindstone.
2 gravel screens.
2 sand screens.
1 spirit level.
2 stone hammers.
1 sledge hammer.
2 ice chisels.
2 ice tongs.
16 water pails.
8 lanterns.
1 telegraph battery.
9 engine belts.
2 stop plank hooks.
4 whitewash brushes.
2 grass hooks.
1 boat.
2 25 horse-power steam-engines.
1 15 " " " "
1 12 " " " "
2 18-inch pumps.
2 12 " "

CIVIL ORGANIZATION OF THE WATER WORKS FROM THEIR COMMENCEMENT, TO MAY 1, 1873.

Water Commissioners.

NATHAN HALE, JAMES F. BALDWIN, THOMAS B. CURTIS. From May 4, 1846, to January 4, 1850.

Engineers for the Construction.

JOHN B. JERVIS, of New York, Consulting Engineer. From May, 1846, to November, 1848.

E. S. CHESBROUGH, Chief Engineer of the Western Division. From May, 1846, to January 4, 1850.

WILLIAM S. WHITWELL, Chief Engineer of the Eastern Division. From May, 1846, to January 4, 1850.

City Engineers having charge of the Works.

E. S. CHESBROUGH, Engineer. From November 18, 1850, to October 1, 1855.

GEORGE H. BAILEY, Assistant Engineer. From January 27, 1851, to July 19, 1852.

H. S. MCKEAN, Assistant Engineer. From July 19, 1852, to October 1, 1855.

JAMES SLADE, Engineer. From October 1, 1855, to April 1, 1863.

N. HENRY CRAFTS, Assistant Engineer. From October 1, 1855, to April 1, 1863.

N. Henry Crafts, City Engineer. From April 1, 1863, to November 25, 1872.

Thomas W. Davis, Assistant Engineer. From April 1, 1863, to December 8, 1866.

Henry M. Wightman, Resident Engineer at C. H. Reservoir. From February 14, 1866, to Nov. 1870.

Joseph P. Davis, City Engineer. From November 25, 1872, to present time.

After January 4, 1850, Messrs. E. S. Chesbrough, W. S. Whitwell, and J. Avery Richards, were elected a Water Board, subject to the direction of a Joint Standing Committee of the City Council, by an ordinance passed December 31, 1849, which was limited to keep in force one year; and in 1851 the Cochituate Water Board was established.

COCHITUATE WATER BOARD.

Presidents of the Board.

Thomas Wetmore, elected in 1851, and resigned April 7, 1856 * *	Five years.
John H. Wilkins, elected in 1856, and resigned June 5, 1860 * *	Four years.
Ebenezer Johnson, elected in 1860, term expired April 3, 1865	Five years.
Otis Norcross, elected in 1865, and resigned January 15, 1867	One year and nine months.
John H. Thorndike, elected in 1867, term expired April 6, 1868	One year and three months.
Nathaniel J. Bradlee, elected April 6, 1868, and resigned January 4, 1871	Two years and nine months.
Charles H. Allen, elected from January 4, 1871, to present time.	

Members of the Board.

Thomas Wetmore, 1851, 52, 53, 54 and 55 * *	Five years.
John H. Wilkins, 1851, 52, 53, *56, 57, 58 and 59 * *	Eight years.
Henry B. Rogers, 1851, 52, 53, *54 and 55	Five years.
Jonathan Preston, 1851, 52, 53 and 56	Four years.
James W. Sever, 1851	One year.
Samuel A. Eliot, 1851 * *	
John T. Heard, 1851	One year.
Adam W. Thaxter, Jr., 1852, 53, 54 and 55 * *	Four years.
Sampson Reed, 1852 and 1853	Two years.
Ezra Lincoln, 1852 * *	One year.
Thomas Sprague, 1853, 54 and 55 * *	Three years.
Samuel Hatch, 1854, 55, 56, 57, 58 and 61	Six years.
Charles Stoddard, 1854, 55, 56 and 57 * *	Four years.
William Washburn, 1854 and 55	Two years.
Tisdale Drake, 1856, 57, 58 and 59 * *	Four years.
Thomas P. Rich, 1856, 57 and 58	Three years.
John T. Dingley, 1856 and 59	Two years.
Joseph Smith, 1856	Two months.
Ebenezer Johnson, 1857, 58, 59, 60, 61, 62, 63 and 64	Eight years.
Samuel Hall, 1857, 58, 59, 60 and 61 * *	Five years.
George P. French, 1859, 60, 61, 62 and 63	Five years.
Ebenezer Atkins, 1859 * *	One year.
George Dennie, 1860, 61, 62, 63, 64 and 65	Six years.
Clement Willis, 1860	One year.
G. E. Pierce, 1860	One year.
Jabez Frederick, 1861, 62 and 63 * *	Three years.
George Hinman, 1862 and 63	Two years.
John F. Pray, 1862	One year.
J. C. J. Brown, 1862	One year.
Jonas Fitch, 1864, 65 and 66	Three years.
Otis Norcross, * 1865 and 66	Two years.
L. Miles Standish, 1860, 61, 63, 64, 65, 66 and 67	Seven years.

John H. Thorndike, 1864, 65, 66 and 67	Four years.
Charles R. McLean, 1867	One year.
Benjamin F. Stevens, 1866, 67 and 68	Three years.
William S. Hills, 1867	One year.
Charles R. Train, 1868	One year.
Joseph M. Wightman, 1868 and 69.	Two years.
Benjamin James, * 1858, 68 and 69.	Three years.
Francis A. Osborn, 1869	One year.
Walter E. Hawes, 1870	One year.
John O. Poor, 1870	One year.
Hollis R. Gray, 1870	One year.
Nathaniel J. Bradlee, 1863, 64, 65, 66, 67, 68, 69, 70, 71	Nine years.
George Lewis, 1868, 69, 70, 71	Four years.
Sidney Squires, 1871	One year.
Amos L. Noyes 1871, 72.	Two years.
Charles H. Hersey, 1872	One year.
Charles H. Allen, 1869, 70, 71, 72	*Present Board.*
Alexander Wadsworth, * 1864, 65, 66, 67, 68, 69, 72	
Jno. A. Haven, 1870, 71, 72	
Edward A. White, 1872	
Leonard R. Cutter, 1871, 72	
Edward P. Wilbur, 1873	
Wm. G. Thacher, 1873	

* Mr. John H. Wilkins resigned Nov. 15, 1854, and Charles Stoddard was elected to fill the vacancy. Mr. Henry B. Rogers resigned Oct. 22, 1865. Mr. Wilkins was re-elected Feb., 1856, and chosen President of the Board, which office he held until his resignation on June 5, 1860, when Mr. Ebenezer Johnson was elected President, and on July 2, Mr. Miles Standish was elected to fill the vacancy occasioned by the resignation of Mr. Wilkins. Otis Norcross resigned Jan. 15, 1867, having been elected Mayor of the city. Benjamin James served one year, in 1858, and was re-elected in 1868. Alexander Wadsworth served six years, 1864–69, and was re-elected in 1872.

* * Deceased.

COCHITUATE WATER BOARD, 1873.

JNO. A. HAVEN, President.

LEONARD R. CUTTER, of the Board of Aldermen.

EDWARD P. WILBUR, WM. G. THACHER,	Of the Common Council.

AT LARGE.

For One Year.	For Two Years.
JOHN A. HAVEN,	CHARLES R. MCLEAN,
EDWARD A. WHITE.	THOMAS GOGIN.

Clerk.

JOSEPH A. WIGGIN.

Superintendent of the Eastern Division.

EZEKIEL R. JONES.

Superintendent of the Western Division.

ALBERT STANWOOD.

Water Registrar.

WILLIAM F. DAVIS.

City Engineer.

JOSEPH P. DAVIS.

STANDING COMMITTEES OF THE BOARD.

Eastern Division.

EDWARD A. WHITE, Chairman.
EDWARD P. WILBUR, THOS. GOGIN.

Western Division.

CHAS. R. McLEAN, Chairman.
LEONARD R. CUTTER, WM. G. THACHER.

Water Registrar's Department.

THOMAS GOGIN, Chairman.
WM. G. THACHER, EDWARD P. WILBUR.

On New Supply.

JOHN A. HAVEN, Chairman.
EDWARD A. WHITE, CHAS. R. McLEAN.

City Document. — *No.* 104.

CITY OF BOSTON.

AUDITOR'S MONTHLY EXHIBIT.

SEPTEMBER 3, 1873.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1873-74.

MONTHLY EXHIBIT.

Office of the Auditor of Accounts,
City Hall, September 3, 1873.

To the Honorable City Council:

Gentlemen, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1873–74, as shown in the books in his office, September 1, 1873, including the September draft, being five months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Advertising	$6,000 00	$1,094 54	$4,905 46
Annuities	512 00	170 00	342 00
Armories	22,000 00	4,962 33	17,037 67
Board of Health	86,274 00	31,193 70	55,080 30
Boston Harbor	10,000 00	1,667 11	8,332 89
Bridges	*32,000 00	17,480 33	14,519 67
Cedar Grove Cemetery Add Revenue rec'd, $7,459 45	3,000 00	9,024 06	1,435 39
Cemeteries	15,700 00	5.508 53	10,191 47
Charles River and Warren Bridges	7,000 00	2,376 93	4,623 07
Chestnut Hill Driveway	5,000 00	5,000 00	. . . . .
City Hospital	110,000 00	50,304 31	59,695 69
Common, Public Squares, etc.	80,000 00	60,078 04	19,921 96
Contingent Funds, viz.:			
Joint Com'i'tees of the City Council	4,000 00	755 05	3,244 95
Mayor	1,500 00	10 00	1,490 00
Board of Aldermen	1,500 00	749 55	750 45
Common Council	3,000 00	1,428 50	1,571 50
County of Suffolk	325,000 00	121,927 02	203,072 98
East Boston Ferries	290,000 00	125,451 16	164,548 84
Engineer's Department	24,000 00	9,664 68	14,335 32
Fire Alarms and Bells and Clocks	50,940 00	18,536 39	32,403 61
Fire Department	551,316 00	288,251 71	263,064 29
Grammar School House, L street	†41,338 55	32,553 98	8,784 57
Health Department	383,550 00	161,590 47	221,959 53
Incidental Expenses	87,000 00	20,836 64	66,163 36
Inspection of Buildings	16,800 00	8,780 22	8,019 78
Interest and Premium	1,695,000 00	394,300 41	1,300,699 59
Lamps	390,000 00	131,207 98	258,792 02
Markets	10,000 00	7,825 35	2,174 65
Militia Bounty	45,000 00	5,159 00	39,841 00
Mount Hope Cemetery Add Revenue rec'd, $17,475 76	15,000 00	21,408 33	11,067 43
Overseers of the Poor	73,400 00	22,200 52	51,199 48
Old Claims	1,500 00	442 70	1,057 30
Paving, etc.	1,000,000 00	512,992 13	487,007 87
Police	700,000 00	279,524 11	420,475 89
Printing and Stationery	35,000 00	18,530 68	16,469 32
Public Baths	40,000 00	24,598 56	15,401 44
Public Buildings	92,000 00	47,057 77	44,942 23
Public Institutions, viz.:			
House of Industry	180,000 00	69,410 79	110,589 21
House of Correction	90,500 00	46,423 92	44,076 08
Lunatic Hospital	60,000 00	22,387 38	37,612 62
Pauper Expenses	31,500 00	10,208 87	21,291 13
Steamboat "Henry Morrison"	16,000 00	10,039 04	5,960 96
Office Expenses	8,000 00	2,999 25	5,000 75
Public Lands	6,000 00	1,478 36	4,521 64
Public Library	‡115,197 28	72,039 53	43,157 75
Quarantine Department	19,250 00	9,665 33	9,584 67
Registration of Voters and Election Expenses	20,000 00	460 00	19,540 00
Carried forward	$6,800,777 83	$2,689,755 26	$4,135,957 78

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* $4,000 of this amount brought from last year.
† $26,338 55 of this amount brought from last year.
‡ $25,197 28 of this amount brought from last year.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Brought forward . . .	$6,800,777 83	$2,689,755 26	$4,135,957 78
Reserved Fund	300,000 00	48,100 00	251,900 00
Salaries	166,000 00	86,037 70	79,962 30
Schools and School-houses, viz.:			
School Instructors . . .	1,024,875 00	394,549 43	630,325 57
School expenses, School Committee	86,750 00	40,192 53	46,557 47
Salaries officers, School Committee	24,500 00	10,113 18	14,386 82
School-houses, Public Buildings	255,000 00	78,468 19	176,531 81
Sealers of Weights and Measures .	7,000 00	2,928 56	4,071 44
Sewers	200,000 00	132,237 02	67,762 98
Sinking Fund Commissioners .	2,800 00	675 00	2,125 00
State Tax	736,480 00	. . . . .	736,480 00
Surveyor's Department . . .	40,000 00	15,691 54	24,308 46
Water Works	336,500 00	177,992 22	158,507 78
Water Works, Interest and Premium	653,000 00	64,489 99	588,510 01
West Boston and Cragie's Bridges	*88,832 23	4,781 97	84,050 26
Widening Streets	300,000 00	125,925 75	174,074 25
		$3,871,938 34	$7,175,511 93
Total Appropriations, $10,932,147 00			
Balances from 1872–3, 90,368 06	$11,022,515 06		
Add Revenue,	24,935 21		
	$11,047,450 27		

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* $34,832 23 of this amount brought from last year.

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General . . .	$11,047,450 27	$3,871,938 34	$7,175,511 93
Special . . .	8,998,372 21	3,773,475 94	5,224,896 27
	$20,045,822 48	$7,645,414 28	$12,400,408 20

SPECIAL APPROPRIATIONS.

[Under this head, the appropriations are the balances brought from the last financial year, and appropriations made the present financial year.]

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Addition to Engine House No. 16, (reserved fund)	$18,000 00	$428 32	$17,571 68
Additional Supply of Water (transfer and loans)	546,418 36	13,022 69	533,395 67
Appleton Street Extension (loan)	2,938 10	. . . . . .	2,938 10
Atlantic Avenue (loans)	203,516 22	72,022 04	131,494 18
Broadway Extension (loans)	80,680 21	. . . . . .	80,680 21
Burnt District (loans)	3,892,516 28	2,036,339 06	1,856,177 22
Canton Street Grading (loan)	33,225 20	. . . . . .	33,225 20
Chelsea Street Bridge (loan)	23,000 00	303 25	22,696 75
Church Street District (loans)	21,415 32	21,587 48	($172 16 to be provided for.)
Coal Sheds, Deer Island (appropriation)	15,000 00	14,449 56	550 44
Columbus Avenue Extension (loans)	362,750 00	325,000 00	37,750 00
Devonshire Street Extension (loan)	113,544 00	63,864 67	49,679 33
Engine and Hook and Ladder House Ward 5 (loan)	50,000 00	. . . . . .	50,000 00
Engine House No. 12 (loans)	19,687 51	15,004 80	4,682 71
Engine House, Ward 14 (transfer and loan)	22,898 95	14,147 70	8,751 25
Fort Hill Improvement (loans)	116,417 77	7,350 22	109,067 55
Grading Madison Square (transfers)	3,015 96	3,015 96	. . . . . .
Grammar School House, Atherton District (loan)	22,861 10	20,236 72	2,624 38
Grammar School House, Dudley District (loan)	110,000 00	2,612 85	107,387 15
Grammar School House Ward 15 (loan)	105,000 00	5,000 00	100,000 00
Harrison Avenue Extension (loan)	58,970 91	12,860 44	46,110 47
Highland Street Stable (loan)	85,000 00	2,011 88	82,988 12
Home for Poor, Deer Island (transfer)	225,000 00	. . . . . .	225,000 00
Hook and Ladder House No. 4, (reserved fund)	12,000 00	11,391 00	609 00
Hose House, Longwood (loan)	28,000 00	5,750 00	22,250 00
Hose House, South Boston (transfer)	7,182 11	7,146 28	35 83
Mather School House, Ward 16 (loan)	46,784 16	33,162 10	13,622 06
Memorial Monument, Boston Common (transfer)	75,000 00	. . . . . .	75,000 00
New Lunatic Hospital (loan and appropriation)	103,655 62	. . . . . .	103,655 62
Parker Hill Reservoir (loan)	161,000 00	988 00	160,012 00
Police Station House No. 11 (transfer)	7,500 00	7,500 00	. . . . . .
Police Station House, South Boston (loan)	45,000 00	. . . . . .	45,000 00
Primary School Houses, East Boston	80,000 00	2,064 44	77,935 56
Primary School House Lot, Ward 14 (reserved fund)	10,000 00	9,383 50	616 50
Primary School House, Ward 9 (loan)	60,000 00	59,080 00	920 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	. . . . . .	10,000 00
Small-pox Hospital (loan)	37,512 46	1,524 50	35,987 96
Soldiers' Relief (revenue)	151,115 48	27,683 60	123,431 88
South Market Street Extension (loan and transfer)	31,915 53	16,491 24	15,424 29
Suffolk Street District (loans)	326,933 79	286,392 09	40,541 70
Ticknor Bequest (transfer)	2,060 51	. . . . . .	2,060 51
Washington Street Extension (loan)	1,025,328 00	547,290 00	478,038 00
Water Street Grade Damages (transfer)	15,546 17	. . . . . .	15,546 17
Water Works Wards 13, 14, 15 and 16 (loan)	115,000 00	63,283 02	51,716 98
Widening and Grading Dudley and other Streets (loan)	10,823 50	2,511 00	8,312 50
Widening Eliot Street (loan and transfer)	13,458 99	. . . . . .	13,458 99
Widening Federal Street (loans)	1,103 03	. . . . . .	1,103 03
Widening Federal Street Bridge (loan and transfer)	9,287 76	8,745 00	542 76
Widening Hanover Street (loans)	41,127 92	. . . . . .	41,127 92
Widening Hanover Street, No. 2 (loans)	62,146 81	11,200 00	50,946 81
Widening Kingston Street (loan)	59,535 81	. . . . . .	59,535 81
Widening Kneeland Street (loan)	4,564 67	77 48	4,487 19
Widening Warren Street (loan)	62,934 00	5,509 05	57,424 95
Widening Washington and Essex Streets (loan)	250,000 00	37,046 00	212,954 00
	$8,998,372 21	$3,773,475 94	$5,225,068 43
		Less to be provided for	172 16
			$5,224,896 27

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1873.

Total Appropriations and Expenditures for Each.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the September draft.

Object of Appropriations.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans)	$610,000 00	$76,604 33	$533,395 67
Appleton Street Extension (loan)	100,000 00	97,061 90	2,938 10
Atlantic Avenue (loans) . .	1,600,000 00	1,468,505 82	131,494 18
Broadway Extension (loans) .	1,000,000 00	919,319 79	80,680 21
Burnt District (loan) . . .	5,000,000 00	3,143,822 78	1,856,177 22
Canton Street Grading (loan) .	150,000 00	116,774 80	33,225 20
Church Street District (loans) .	1,175,000 00	1,175,172 16	($172.16 to be prov'd for.)
Columbus Avenue Extension (l'ns)	515,000 00	477,250 00	37,750 00
Devonshire Street Extension (loan)	510,000 00	460,320 67	49,679 33
Engine House No. 12 (loans) .	31,000 00	26,317 29	4,682 71
Engine House W'd 14 (tran. & l'n)	30,000 00	21,248 75	8,751 25
Fort Hill Improvement (loans) .	1,575,000 00	1,465,932 45	109,067 55
Grading Madison Square (transfers)	12,158 49	12,158 49	. . . .
Grammar School House Atherton District (loan)	50,000 00	47,375 62	2,624 38
Grammar School House L Street (loan and appropriation) . .	105,000 00	96,215 43	8,784 57
Harrison Avenue Extension (loan)	220,000 00	173,889 53	46,110 47
Hose House, So. Boston (transfer)	23,000 00	22,964 17	35 83
Mather School House, W'd. 16 (loan)	65,000 00	51,377 94	13,622 06
New Lunatic Hospital (loan and appropriation)	148,000 00	44,344 38	103,655 62
Oliver Street , ...	187,114 05	352,895 17	($165,781.12 advanced by Treasurer.)
South Market Street Extension (loan and transfer)	333,000 00	317,575 71	15,424 29
Suffolk Street District (loans) .	2,381,248 96	2,340,707 26	40,541 70
Washington St. Extension (loan)	1,500,000 00	1,021,962 00	478,038 00
Water Street Grade Damages (tr'n)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley and other Streets (loans) . .	180,000 00	171,687 50	8,312 50
Widening Eliot Street (l'n and tr'n)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Federal St. Bridge (loan and transfer)	90,584 25	90,041 49	542 76
Widening Hanover Street (loans)	725,000 00	683,872 08	41,127 92
Widening Hanover St., No. 2 (l'ns)	820,000 00	769,053 19	50,946 81
Widening Kingston Street (loan)	225,000 00	165,464 19	59,535 81
Widening Kneeland Street (loan)	150,000 00	145,512 81	4,487 19
Widening Warren Street (loan)	115,000 00	57,575 05	57,424 95
	$20,441,105 75	$16,797,894 56	$3,809,164 47
Advanced by Treasurer . .	165,781 12	Less to be provided for	172 16
	$20,606,886 87		$3,808,992 31

City Document. — *No.* 105.

CITY OF BOSTON.

REPORT BY THE COMMISSION

APPOINTED TO INVESTIGATE THE SUBJECT

OF THE

ANNEXATION

OF

CERTAIN NEIGHBORING CITIES AND TOWNS

TO THE

CITY OF BOSTON.

REPORT OF THE CITY COMMISSIONERS.

Mayor's Office, Sept. 18, 1873.

To the Honorable the City Council of the City of Boston: —

Gentlemen, — I have the honor to submit, for your information, the Report of the Commissioners appointed under an order approved January 2, 1873, upon the subject of the annexation of certain neighboring Cities and Towns to the City of Boston.

HENRY L. PIERCE, *Mayor.*

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Jan. 2, 1873.

Whereas, Certain citizens of the City of Charlestown and the Town of West Roxbury have given notice of their intention to apply to the next General Court for an act to annex said city and town to the City of Boston; and, *whereas,* in the opinion of many of our citizens it is only a question of time when the cities of Cambridge and Somerville and the towns of Brookline and Brighton will also apply for such an act, it is therefore

Ordered, That His Honor the Mayor be requested to appoint a Commission of three discreet and intelligent persons, who shall carefully examine the subject in all its bearings, and report to the City Council, in print, as soon as may be, upon the financial, industrial and sanitary questions concerned in the matter; provided that the investigation shall be attended with no expense to the City of Boston, except the expense of printing the report.

Passed in Common Council. Came up for concurrence. Read and concurred. Approved by the Mayor, January 2, 1873.

A true copy. Attest:

S. F. MCCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Feb. 3, 1873.

Ordered, That the Committee appointed under an order of the City Council approved January 2, 1873, to report upon the financial, industrial and sanitary questions concerned in the annexation of certain cities and towns to the City of Boston, be authorized to procure such clerical services and such surveys and plans as they may require for the prosecution of their investigation; the expense to be charged to the appropriation for Incidentals.

Passed in Common Council. Came up for concurrence. Read and concurred. Approved by the Mayor, February 4, 1873.

A true copy. Attest:

S. F. McCleary, *City Clerk.*

CITY OF BOSTON.

The majority of the Commissioners appointed by His Honor the Mayor, in pursuance of the foregoing order, respectfully submit their

REPORT.

To the City Council of Boston: — The Commission appointed January 3d, 1873, was not organized until the 29th of the same month, in consequence of the resignation of J. Tisdale Bradlee, Esq. On this latter date an organization was effected.

At various times subsequently meetings were held, and committees from the towns of Brookline, Brighton and West Roxbury, and a Commission from the City of Charlestown, appointed to advocate the annexation of their towns and city, were received and heard. Statistical tables, calculated to give all pertinent information concisely, and yet as fully as possible, were made up. As the City of Boston had no map that would convey a comprehensive idea of the geography of our city and surrounding towns, the Commission early prepared one, under the direction of the City Surveyor, Thomas W. Davis, Esq., representing all the territory embraced in the order, which your commissioners offer herewith, as affording valuable assistance in the consideration of the subject under advisement. The several towns and cities reported upon have been visited on different occasions, and inquiry has been pushed in every avenue of research open to us, in order that all the light attainable might be thrown upon the questions involved in the scheme presented.

Hamilton A. Hill, Esq., appointed on the Commission in place of J. Tisdale Bradlee, Esq., resigned, having made arrangements to engage in business in England, left this country in the latter part of April. Before going he strenuously urged the Commission to make their report in full immediately; but as no action had been taken in the matter, and important legislation on the subject was at that time pending at the State House, and time had not elapsed sufficient to obtain a knowledge of the facts requisite to an advised conclusion, and no opportunity having been offered of visiting the towns and cities under consideration, and particularly as no decisive action could be taken in the premises before fall, the majority of the Commission deemed any report at that time premature and injudicious. But Mr. Hill, having written a report, submitted it to the Board, and this, so far as it recommends the annexation of Brookline, Brighton and West Roxbury, the undersigned unqualifiedly approve. The majority of the Commission, however, feel constrained to say, that, having entered upon their duties without bias or prejudice, they justify any conclusions in which they may differ from Mr. Hill, as the result solely of the investigation they have given the subject.

The question of the advantage or disadvantage of the consolidation of several cities and towns, or the annexation to any one of them of all the rest, is not one which in the abstract admits of much profitable discussion; and the circumstances peculiar to individual instances will almost solely direct the judgments of men, whenever the proposition for or against attracts their notice.

It may be said in general, that consolidation means strength, independent existence, rapidity of action; consolidation increases the importance and powers of the city, but diminishes those of the citizen; divides the number required to legislate, but enlarges the force necessary to execute; subrogates officers to their offices; renders abuses of power rare but momentous; affords opportunities for great, rather than many breaches of trust; nullifies the influence of small factions, and destroys many facilities for petty tyrannies and wrongs. But of these things it is not our duty to treat. The task assigned to us is specific: "To carefully examine the subject of the annexation of certain towns and cities to the City of Boston, in all its bearings, and to report upon the financial, industrial and sanitary questions concerned in the matter."

In the furtherance of this object, a copy of the statistical tables before alluded to was sent to the clerk of each of the following cities and towns: —

Cambridge,
Somerville,
Brookline,
Charlestown,
West Roxbury,
Brighton;

and, though not included in the order, to the town clerks of

Everett,
Revere,
Malden,
Watertown,
Medford,
Winthrop,
Chelsea.

Accompanying the questions was the request that the clerk would fill out the answers and return them to the Commission. In most instances this was done, and we take this early opportunity of expressing our thanks, not only to the clerks, but to the other officials whom we have been obliged to consult, and that frequently, and in busy hours, both for the indispensable information they have given, and the uniform courtesy with which they have rendered us every assistance in their power.

The questions and answers, with such other relevant matter as could be incorporated in the tables, are appended.

As three of the towns enumerated in the order, namely, Brookline, Brighton, and West Roxbury, are without any adequate supply of water, the wants of Brookline, in this respect, being already pressing, and as the subject is one that has been regarded as of vital importance by the municipalities of all time, we have felt justified in devoting a portion of our report to a consideration of the relevancy of this subject to the whole plan submitted to us.

GENERAL ANNEXATION.

Aside from the reasons suggested in connection with the water question, and independent of the advantages to be secured by receiving any one of the towns or cities named in the order, some points may be presented in favor of the annexation of all of them.

By this means we would establish concert of action in projecting and carrying out improvements in which the several communities have a common interest: reclaiming and filling marsh lands; constructing systems of sewerage; laying out main thoroughfares; locating engine-houses, police-stations, and school-houses; and, in brief, in conducting the business of nearly every department of a town or municipal government, particularly that having charge of the public health, may be mentioned; for it must be admitted that the spread of contagious diseases cannot be checked by the existence of imaginary lines, and the consequences of a condition of things in one of the towns or cities under discussion which would engender an epidemic there, must, to an almost equal degree, be borne by all the rest.

The Charles River is to the City of Boston what the lungs are to the human body. Yet, into this stream, not only our own city, but Cambridge, Somerville, Waltham, Brighton, West Roxbury, and Charlestown, already empty more or less of their sewage; and Brookline is constructing a large sewer to contribute the drainage of that town to the general mass of filth; this, too, notwithstanding the remonstrances of authorities on the subject whose evidence it is dangerous to reject; who denounce the system, or want of system, at present pursued, and warn us that the river is already overloaded. This condition of things undoubtedly furnishes a factor, not inconsiderable, in swelling the death-rates of our city, in which respect Boston suffers by comparison with nearly every large city in the land.

The rapid multiplication of buildings upon the Back Bay and adjacent portions of the city renders it imperative that early action be taken to prevent further encroachments upon the purity of these waters; but there can be no hope of any comprehensive plan for protection in this direction except by overlooking and regulating all the sewage entering into the river from both its banks. Either State legislation must be invoked, vesting ample power in a Board of Health to control the entire district, or the territory must come under the management of one municipal government.

As bearing upon this we quote from the Fourth Annual Report of the State Board of Health, pp. 6, 7, 62, 63, 450, 451: —

"SEWERAGE OF THE METROPOLITAN DISTRICT.

"In connection with the investigation concerning Miller's River, and the practicable plan of sewerage reported by the Commission, we would respectfully invite the attention of the Legislature to the need of some comprehensive and harmonious system for the drainage of the whole Metropolitan District. Cambridge and Somerville, in the difficulties they have encountered by the joint use of an insufficient outlet for their sewerage, may fairly represent other cities and towns in the immediate vicinity of Boston, whose trouble will come very soon from similar causes.

"A competent engineer, surveying the whole territory without regard to the limitation of arbitrary lines representing the limit of jurisdiction of a single municipality, has, as we believe, solved a problem which might have vexed Cambridge and Somerville for a generation. At the recent extra session of the Legislature, an act was passed providing for a commission of engineers to report plans for the sewerage and water supply of the Metropolitan District, but it failed from the non-concurrence of the City of Boston. It is hoped that some similar plan, free from the very reasonable objections which were made to the act rejected by Boston, may be soon undertaken. It seems to us of great importance in the interest of public health that some comprehensive system should be adopted."

"The present system of Boston sewerage may be regarded both in its sanitary and economical relations. In the first place, it is of the utmost importance, in so far as public health is concerned, to be absolutely *rid* of the sewage. Our population is dense, and we cannot afford to retain these foul materials among us. Whether there be more or less money value in the water flowing from our sewers; whether in each ton of such water there be one, two or three cents' worth of a fertilizer, which may or may not be extracted and saved by chemical or other processes, is of comparatively little account. The health of the city has a positive and appreciable money value. Health is truly wealth. We think no better bargain can be made, at the present time, than to deliver the sewage in strong tidal currents. It is now but partially dispersed: a large portion of the insoluble contents of the sewers is deposited in the docks or on the mud flats of Charles River. If this could be conducted to deep water, where it would meet a strong ebb-tide, by sewers extending to the ends of the wharves, or in the case of Charles River, by a capacious collecting sewer, reaching as far as the Charlestown bridges, it would be of great public advantage.

"It is asserted that the discharge of the sewage into tide-water contributes to the shoaling of the harbor. These objections are unfounded: it is true, that a deposit takes place in the docks into which the sewers empty, and necessitates occasional dredging; as regards its influence on the harbor, the Harbor Commissioners 'find no proof whatever of injury from the discharge of sewage. It is effectually and completely dispersed, and no trace of it is found in any bars or shoals outside of the docks and wharves.'"

Boston. — "The health report of the chief city of Massachusetts for 1872 is of an unfavorable character. The same neglect of the authorities to remove causes of disease, perfectly within their control, has continued, and their effects are seen in the extraordinary number of deaths. As a city increases, the mortality will inevitably increase more rapidly than the population, *unless the means of repressing disease keep pace with the city's growth.*

"Boston has neglected such provisions, and is reaping the fruit of the neglect.

"In addition to the usual causes of death, which gather intensity with every year's official negligence, Boston has had to meet an epidemic of small-pox, which is now sweeping over this and other countries with a virulence previously unknown. The effect of this unusual mortality, from a special and temporary cause, on the general mortality from all causes is worthy of particular remark, and is commended to the attention of the fatalists, who contend that all efforts to prolong human life are vain and useless, and that an epidemic diminishes the mortality of other forms of disease.

"There died in Boston in 1871, 5,888 persons. There died in Boston in 1872, 8,089 persons. Reckoning the total mortality in each year, the increase in one year is 37 per cent. Excluding small-pox in both years, the increase in one year is 25 per cent.

"The death-rate cannot be given, because we do not know the present population. But every one will see that however great the increase may have been in the business of Boston, the number of persons resident within its territory can hardly have increased more than 5 per cent, in a single year, and probably not more than 3 per cent. We do not regret that the exact death-rate cannot be recorded, for the figures would be discreditable to the metropolis of New England."

Also the following from Boston (City Doc. No. 92), 1872. Report of Committee on Back Bay Drainage, pp. 5, 6, 7, 9, 10, 11:—

"The brooks emptying into Muddy River, or Longwood stream, drain an area of about 2,600 acres."

"The larger portion of this drainage area is in Brookline, with smaller portions in Brighton, West Roxbury, and Boston. The question of the future disposal of the sewerage waters of this large district, greater in extent than the present area of the city proper, is one of the utmost importance.

"Muddy River empties into the full basin, at the present time a portion of the Charles River basin, although eventually to be filled and built upon.

"The drainage of Muddy River must then be conveyed through sewers, laid in the streets of this territory, to the Charles River basin, or diverted to some other point."

"The area of the Stony Brook district, not including the area of the low district through which it runs, from the crossing of the Boston and Providence R. R. of Tremont street, is 8,000 acres, and the area of the

Muddy River district, not including the area of the low district east of the Brookline station, is 2,600 acres."

"The Charles River basin is too large for its outlet, at the present time, and this difficulty will increase instead of diminish if any further encroachments are permitted by increasing the width or number of the bridges between Boston and Cambridge and Charlestown, and the force and velocity of the currents in the tidal basin, already too small, will be still further reduced with a corresponding increase of deposits. This basin not only receives a large proportion of the sewage of Boston and Cambridge, but also the sewage of Brighton, Watertown, Newton and Waltham. The sewage of these towns is not very large, as they have no system of public water supply; but the introduction of water will be accompanied with systems of sewerage by which the amount will be greatly increased. The natural source of supply for these towns is the Charles River; and, as it is evident that a considerable amount of its water will first be contaminated by use, and then returned to the river as far below the towns as possible, the effect will be to increase the objectionable accumulations in the basin. There are several plans by which such a nuisance could be abated, — one is the construction of a marginal sewer to intercept the sewage and convey it to a point where it will be dissipated at once by the action of the tidal currents; another to remove the accumulations by dredging; either of these plans would be exceedingly expensive. The size of the basin might be reduced to such an extent as only to leave a channel through which the current would run with such velocity that there could be no deposits. As the several commissions on Boston Harbor have advanced the theory that preservation of this basin intact is necessary for the protection of the inner harbor from shoaling, and its capacity should be increased rather than diminished, this plan is not feasible. Under these circumstances, the manner in which the sewage of districts under consideration can be conveyed to some less objectionable place than the Charles River basin becomes of the greatest importance."

"The commissioners on the Back Bay streets, with reference to their direction, sewerage and grade, in their report upon this subject (1863, City Doc., 81, p. 41), state, after some remarks upon the magnitude of the drainage area of Stony Brook: 'The remedy which we think must finally be adopted will be to intercept Stony Brook at or near Washington street, in Roxbury, and by the construction of a tunnel and sewer in a south-easterly direction, through Roxbury and Dorchester, discharge all the water from this brook and this territory into the most easterly end of Dorchester Bay. This method of its discharge will relieve Charles River and the property bordering upon it from all offensiveness from this source, and also relieve Charles River and the main body of the harbor from the deposit of any sediment from this section of territory.' They also refer to the second report of the United States Commissioners on the condition of Boston Harbor, dated Dec. 12, 1860, in which 'it is shown that between the years 1835 and 1847 there has been deposited in Charles River, between the Milldam and Charles River bridge, an amount of sediment equal to 1,499,000 cubic yards. No doubt the largest portion of this sediment has been brought down by Charles River, draining, as it does, many square miles of territory.'

"This Commission makes no recommendations with regard to the drainage of the Muddy River district, the scope of their investigations being confined to the drainage of the Back Bay, although it is difficult to understand why the drainage of this large territory should have been overlooked, unless it is upon the ground of its capability of being drained directly into Charles River by intercepting the drainage before its entrance into the full basin. Even in this case, the objections made to the conveyance of the Stony Brook drainage to this point will apply with equal force to Muddy River, and its drainage area is one third as large."

"The deaths in Boston for 1873, from January 1st to September 1st, are 5,507 against 5,275 for the same period in 1872, showing that the death-rate is equally great for the present year up to the present time; and putting Boston, in this respect, in the same class with Liverpool, Glasgow, New York, and New Orleans." We quote Dr. Derby, of the State Board of Health.

And from the "Boston Medical and Surgical Journal," of the 11th of the present month, we make the following extract, p. 266: —

"The question of sewerage is, indeed, one of great importance to the city, intimately connected with its future growth and prosperity, and one full of difficulties, which are constantly increasing with every new filling, whether of Back Bay, Ruggles street, or other districts. Moreover, it is closely associated with the drainage of surrounding municipalities. How far the condition of the extensive flats surrounding us, at low tide, in all directions, and the condition of the soil itself on which Boston stands, is affected by the present system of sewerage, is but one of the many questions relating to this important matter. We are far from feeling reassured by the report of the Committee on Sewers, and we think the sooner the whole matter is thoroughly investigated by competent engineers the better. It seems to be by far the most important sanitary question with which we in Boston have to deal."

Finally, we deem superfluous any lengthy treatment of the importance of good health to our commercial prosperity; to the influence of annexation, upon which latter topic, we invite your attention. The annexation of Charlestown, Brookline, Brighton, and West Roxbury would give to our city an area, population and valuation as follows: —

	Taxable Area in Acres.	Populat'n, 1870	Valuation, 1873.
Boston	9,583	250,513	$693,831,400
Charlestown	520	28,323	(*a*)34,942,120
Brighton	2,370	4,967	14,548,531
Brookline	3,883	6,650	28,476,000
West Roxbury	6,627½	8,683	22,148,600
Total	22,983½	299,136	793,946,651

(*a*.) Last year's valuation. Not made up for this year at date.

Making our city the fifth ranked by population in the United States, according to the census of 1870.

And an area in comparison with New York and Philadelphia, as follows: —

	Acres.
New York	14,502
Philadelphia	82,560
Boston	22,983½

The constantly increasing international communication all over the world requires us to bear in mind that foreign merchants, in choosing a port of consignment for their shipments to this country, and in selecting a theatre for their operations here, would consult the prominent facts of our commercial facilities, wealth and numbers.

As tending still further to show the commercial weight and facilities which our city would acquire by annexation, attention is asked to the facts and figures set forth in relation to terminal improvements of railroad lines and water front in the separate discussion of Charlestown, and to apt suggestions in observations on water supply.

The question, considered by itself, as to when a city becomes crowded and requires more room for growth, is in its nature dependant; but it seems desirable that it should never be so limited as practically to admit of a monopoly of its vacant lands by speculators, and the maintenance of prices therefor that bar men of moderate means employed within its limits from the privileges of citizenship. Perhaps nothing has stimulated the erection of so many neat and inexpensive homes in the city of Philadelphia, as the broad area of that city, rendering it not poor economy to build moderate priced houses upon their lands. While the contracted boundaries of Boston has, with exceptional instances, placed homes of their own beyond the reach of laboring men; has induced the holding of land in large tracts, keeping it out of the market, save at exorbitant prices, and has introduced a system of speculative building that has resulted in the erection of thousands of costly, narrow and inconvenient houses, unsuited to the wants of our people, and in localities wholly unfit. It is not sufficient that a city have room enough; it is further necessary that the space be in a measure equally distributed in different directions, that citizens of every occupation and locality of employment may avail themselves of its advantages. And a still further consideration that leads your commissioners to deprecate the continued acquisition of territory on one side of our city only, is that it shifts the centre of business, causing it to move in the direction towards which the extension tends, thus increasing values in that quarter at the expense of the sites formerly occupied. Of the community of interest between Boston and the contiguous cities and towns hardly anything new can be said, though the theme, if trite, has lost nothing of its force by age and use.

Aside from the industry of Boston, none of the places enumerated in the order are doing sufficient business to warrant anything like their present valuation or population; and if their interests, which centre in Boston, were removed, there is no reason why any considerable portion of their inhabitants should stay with them. Their residents are in almost everything but name our fellow-citizens.

As tending to substantiate the above, the following table has been compiled from the "Industry of Massachusetts in 1865." The second column contains the aggregate capital of the principal three industries of the towns or cities mentioned. The places selected for the purpose of comparison are those which, at the time, were the nearest in the State, in number of inhabitants, to the cities and towns referred to in the order.

COMPARATIVE STATEMENT.

	Population.	Capital invested.	Employés.		Population.	Capital invested.	Employés.
Cambridge	29,112	$1,110,000 00	942	Lowell	30,990	$12,011,500 00	4,878
Charlestown	26,339	873,000 00	352	Springfield	22,035	1,051,400 00	950
Somerville	9,353	500,000 00	526	Pittsfield	9,676	1,394,400 00	1,415
West Roxbury	6,912	108,000 00	30	Woburn	6,999	595,850 00	626
Brighton	3,859	390,942 00	140	Lee	4,035	734,000 00	950
Brookline	5,262	103,500 00	27	Attleborough	6,200	635,750 00	1,272
	80.837	$3,385,442 00	2,017		79,935	$16,422,900 00	10,091

The ratios to be drawn from the above are not materially changed by the secondary or remaining pursuits. It will be noticed that while a capital of more than sixteen millions must be invested, and employment for over ten thousand people furnished to maintain a population of seventy-nine thousand away from Boston, three millions of capital and two thousand employed, support a population of eighty thousand in our vicinity. There can be but one explanation of this discrepancy, and that is that the capital of our neighbors is with us invested and their laboring classes are here employed.

The United States Post Office Department recognizes the above fact, and has anticipated the action we urge, as may be seen from its late order, a copy whereof has been kindly furnished by General Burt, and may be found appended, marked "K."

In Boston City Document No. 73, of 1867, concerning the annexation of Roxbury, we find the following from the report of the Legislative Committee on Towns, pp. 22, 23, 24, 25, 26: —

> "While business has increased, the area occupied for that purpose has been enlarged, and streets formerly used for dwellings are now devoted to stores, shops and warehouses. This change is being made more rapidly at the present time than at any former period.
>
> "We shall then find the metropolis of New England in this anomalous and dangerous condition, limited and fixed in two essential elements of her growth, — territory and population; her vast wealth and business largely owned by non-residents, heavily taxed, having no voice or vote in the municipal government that holds jurisdiction over the wealth and trade of the city; the entire management and control of the government placed in the hands of a resident population, a large majority of whom may feel but lightly the burdens of taxation, or the responsibilities of power.
>
> "To avoid this approaching condition, a large territory, already a necessity for a free and healthy growth of Boston, must be added to her limits; thereby retaining her men of wealth and business, her men of

culture and taste, of piety and learning; the business, social, and religious elements needed for her safety and prosperity."

"The evidence proved that a large number of her citizens hold their property and have their places of business in Boston; that they have interests, opinions, and feelings, in common with her citizens; that the prosperity of one city is the prosperity of both; that the destiny of one must be the destiny of the other.

"That annexation will relieve them from double taxation for the support of two governments, when one would be cheaper and more efficient, and give them their rightful influence and power in forming and modifying the municipal legislation under which they live, hold their property, and prosecute their business.

"The health, comfort, and prosperity of the city already call for a large supply of running water, with which Roxbury is poorly supplied, depending largely upon wells lowered at great cost."

"It is believed that Boston and Roxbury united could furnish a sufficient supply of water to the citizens of both cities at a much less cost than the same cities could separately furnish themselves. It would be a needless expenditure of money for two cities, in all respects one, united by mutual growth, to adopt and forever maintain separate dams, reservoirs, aqueducts and pipes, when a small additional expense on the part of one would furnish an ample supply to both."

"The two cities are alike interested in the subject of streets and drains. The evidence, and survey of the grounds show that a uniform and extended system of streets and drainage should be *immediately* adopted, embracing all the Back Bay lands. A complete and thorough system for Boston must extend within the limits of Roxbury; and Roxbury gains four additional feet to the fall of her drainage by extending it through the lands of Boston. Until a common plan of sewerage is accepted, meeting this mutual necessity, a large area of the flats must remain a shallow cesspool for the waste and offal of both cities."

"Intelligent citizens of Boston and Roxbury testified that the want of a common system had retarded the progress of public improvement, endangered the public health, depreciated property, and involved both cities in present and future loss; that unity of plan and concert of action had never been secured by the two governments; that conflicting opinions divide their plans and defeat their united action; that a common system of streets and sewerage could never be devised and prosecuted with any hope of practical success under two municipal governments."

"We cannot urge with too great stress the pressing necessity of a common system of streets and drains. The evils and embarrassments already experienced should warn against similar and greater evils to come. The rapid growth of Boston in the past should enlarge our conceptions of the future; and the judgment, sagacity and taste of her citizens should immediately project a comprehensive plan of parks, squares, spacious avenues and streets, in which the future of Boston may receive a permanent form, and her health, beauty and greatness be secured.

"Hitherto Boston has been walled in by the sea, cramped and compressed in her growth; her streets, narrow and irregular, like the walled cities of the East. For half a century she has carted gravel into the bay, making land for streets and warehouses, to the serious damage of her harbor. What she most needs at the present time is *room*.

"Not only should the territory of Roxbury be added, but her borders extended across the waters to the surrounding main land and to the highlands beyond, that she may hereafter embrace within her corporate limits the population, wealth and civilization that legitimately belong to her."

So much of this as is couched in the language of prediction experience has proved to be true. And the whole of it is as applicable to our subject to-day, as it was to the annexation of Roxbury in 1867.

For figures showing the increase in value and population in Roxbury and Dorchester, since annexation,attention is called to the table appended, marked "A."

WATER.

One of the principal objects in view, by the towns recommended for annexation by your commissioners, is to obtain a plentiful supply of pure water; while on the other hand the two cities with which we have considered an alliance are provided with works at neighboring lakes that yield quantities not only sufficient for their own consumption, but a large surplus to spare.

Boston to-day is unable to furnish all of her own citizens, and is compelled to make up the deficiency by purchase from Charlestown; the construction of new conduits between Sudbury River, Lake Cochituate and Chestnut Hill Reservoir, and a new main to the city by which an adequate quantity can be obtained, it will require about four years to complete. Meantime Brookline, Brighton and West Roxbury, if annexed, would look to this source in vain.

As contingencies have arisen in the past by which we have been temporarily deprived of Cochituate, and are liable to occur in the future, any arrangement by which the danger of calamities imminent in such an event might be averted is of the utmost moment.

Boston should not only have water sufficient, but in such an abundance as to admit of its free use with the least possible restrictions. We could offer no greater inducement than this to the location of manufactories in our limits, "with a city rapidly increasing in population and growing daily in business, both of a mercantile and mechanical character;" it is of the highest importance to offer them the advantage of a certain and unlimited supply of water. As an illustration of this the obstruction of the screens of the Chestnut Hill Reservoir by ice two years ago, thereby depriving the city for a part of the day, cost one corporation over five hundred dollars; and it must be borne in mind that this or a similar difficulty is liable to occur so long as we depend solely upon a single source.

Happily, however, we have tendered to us, even at our gates, a perfect safeguard and a generous relief, to be secured by the annexation of Charlestown to our city.

In support of the foregoing we quote from Report of Cochituate Water Board, March 13th, 1873, pp. 6, 7, 41, 42, 43: —

"During 1871, the restrictions upon the use of water have been quite rigid, and a careful inspection has been maintained to prevent waste; yet the average daily consumption has been nearly 14,000,000 gallons, or two millions per day more than the source can be relied upon to yield in a year of light rainfall."

"It is plain that an additional source of supply was at the beginning of 1872 (the lake being then practically exhausted) imperatively demanded, and that steps to secure it were taken none too early."

WORKS AT THE RESERVOIR.

"At Chestnut Hill reservoir no provision has been made to keep up the supply to the city when the water may be drawn off for cleaning or repairs. Until the consumption shall be somewhat greater than it is now, the supply could be delivered through the Brookline reservoir. There are, leading from the latter to the city, three distributing mains, one thirty-inch, one thirty-six inch, and one forty inch, and it is not probable that another will ever be laid. These should be equal to a supply of about 20,000,000 gallons per day, but during the morning hours, when the consumption is at the maximum for the day, the pressure in some parts of the city would be inconveniently diminished, if so large a delivery were demanded of them. Even with the present consumption of only fourteen or fifteen million gallons, it is felt that a new main must soon be laid from Chestnut Hill reservoir, to keep up the head desired in all parts of the city. It is probable that the older mains are badly tuberculated, and therefore fail to deliver the quantity that calculation would show they ought.

"Something would be gained by connecting the Brookline mains with those that are to be laid from Chestnut Hill; but notwithstanding whatever may be done in that direction, it will not be considered safe to draw off the Chestnut Hill reservoir after the consumption shall have reached 20,000,000 gallons per day; in fact, the portion of the old conduit between the two reservoirs cannot be made to supply a much greater quantity than this."

"First, the work to be done at the Chestnut Hill reservoir, in the building of the inlet chambers and the laying of the connecting pipe, requires this reservoir to be emptied for a considerable time, during which the supply must be maintained entirely from the Brookline reservoir. This cannot be done after the consumption shall have increased much above its present amount.

"Second, although by keeping in repair the works that were built last summer to connect the Sudbury with the lake, a sufficient supply to the latter can be kept up, a much larger supply to the city than is now used cannot be safely conveyed to the distributing reservoirs by the existing conduit."

If we look to Sudbury River alone in our extremity, as has been said, we cannot satisfy the towns recommended for annexation for three or four years; the cost of the works there is to be enormous, and disproportionate to the quantity vouchsafed.

Report of the Cochituate Water Board, March 13, 1873, pp. 58, 59, 48, 44: —

"SUDBURY RIVER.

"The drainage area of the Sudbury above the outlet of Farm Pond is about seventy-three square miles, and it is estimated that with the storage facilities it presents, a daily supply of at least forty millions of gallons may be obtained from it.

"The estimate of cost of the complete works required to secure this supply and convey it to the Chestnut Hill reservoir is $5,150,000.

"The objections are, the somewhat limited supply it will yield, and the value of the mill interests affected. The first will be considered an objection of some importance, provided it is assumed the city will ever grow beyond a population of nine hundred thousand or one million of people. In such case, the remedy would be, either to turn the Assabet River into the Sudbury, or to pump from the Charles into the Sudbury River conduit at South Natick.

"In regard to water damages, it should be stated that they will amount to a large sum. The total fall, from the point where the water is to be diverted from the Sudbury, to tide level, is one hundred and forty-five feet; and something above three-fourths of this fall is now made available for power to drive machinery.

"The existing condition of the conduit is naturally a source of great anxiety to those having it in charge. The danger is that the leakage may become so great, or be so long continued at some point on an embankment (where the worst cracks are found), as to slowly settle or carry away the earth under and around it, and allow it to sink. The sinking would enlarge the cracks, perhaps cause others, and the flow through them would likely be sufficiently great to suddenly wash away the supporting earth, and, before the danger was discovered, completely disrupt the conduit. In such a case its whole flow would be turned upon the embankment, and the disaster would become of a very serious nature. Any accident of this kind, even if it should not deprive the city of its supply, would allow the reservoirs to be drawn to a very low level, and in consequence seriously diminish the pressure throughout the city. The reservoirs once drawn down would require a long time to fill again, owing to the limited capacity of the conduit, which, as before shown, is barely able to meet the daily supply."

[*From Boston City Document No.* 89, 1872.]

Communication from Cochituate Water Board, on the quality of Mystic Lake water, pp. 4, 5, 6: —

"Cochituate Water Board,
"Office, City Hall, Boston, Sept. 9th, 1872.

"To the City Council of the City of Boston:—

"The order recently adopted by the City Council requesting the Cochituate Water Board to furnish Cochituate water to East Boston at the earliest practicable moment, has been fully and carefully considered, and, in connection with said order, the Cochituate Water Board beg leave to submit the following considerations: —

"After the annexation of Roxbury and Dorchester, the question of ability to supply those districts with water came up for consideration, the *capacity to deliver* through the conduit entering quite largely into the case.

"A proposal to purchase water from the Mystic Water Board, for the supply of East Boston and the Institutions at Deer Island, was made, and upon examination of the subject it was found that the districts named could be furnished by this means with an abundant supply of excellent water, at far greater head than could possibly be derived from Cochituate, which was a valuable and important consideration, whether wanted for domestic use or for fire purposes.

"The plan was submitted to the City Council, and under their sanction and approval a contract was made, and the supplying of East Boston with Mystic water was commenced January 1st, 1870.

"One of the conditions of the contract is, that the contract shall remain in force, upon the terms agreed, until the Water Debt of the City of Charlestown is extinguished; and it is quite clear that any breaking of the contract might render the City of Boston liable for damages.

"The Mystic water has always been considered a pure water, and until quite recently complaints against the purity of Cochituate have been quite as frequent as those concerning the Mystic.

"In the month of July last the attention of this Board was especially called to the condition of the Mystic water, and the facts were immediately communicated to the Mystic Water Board, by whom action was at once taken.

"They caused all their pipes in East Boston and Chelsea to be flushed out, and also drew off and examined their reservoir, after which the water was greatly improved, as can be seen by samples now in this office, and taken from several points before and after the cleaning out of the pipes and reservoir. Legal measures have been taken to remove all manufacturing and other objectionable features from the borders of the Mystic River that are liable to render the waters impure; and we submit herewith a copy of a communication recently received from the Mystic Water Board upon this subject.

"During the last month, samples of Mystic water were sent to Prof. C. F. Chandler, of New York (a prominent and experienced chemist, whose name was suggested by residents of East Boston), and to Dr. S. D. Hayes, State Assayer of Massachusetts, for analysis. Copies of their reports are herewith transmitted, giving opinions very favorable to the purity of the water.

"In the discussion of this subject it will naturally be argued that the City of Boston has now a large and abundant supply of its own, and therefore no further need to purchase water from Charlestown at a large annual expense, and it is perhaps quite proper to submit a few considerations upon this point.

"By a recent act of the Legislature, the city was authorized to increase their water supply by the taking of Sudbury River. As yet this supply is only available to *fill up Lake Cochituate;* to give full force to the immense benefit which will accrue from this new source of supply, it is necessary to build a new and independent line of conduit of liberal dimensions from Sudbury River to Chestnut Hill Reservoir, establishing gates near Lake Cochituate, by which means the lake can be filled up if it should fall below the proper level.

"Competent engineers are now engaged in surveying to determine the most desirable route for such conduit, and the result of their labors will soon be laid before you. The building of such a conduit and getting it into operation will require considerable time; perhaps even three or four years.

"The amount of Cochituate water now used is far greater than was contemplated when the present conduit was built, and the strain upon it (especially in cold weather, when many citizens run much water to waste to prevent freezing) is very great, and this Board is decidedly opposed to increasing the *pressure*, rendering breakage of the conduit imminent, with possibility of shutting off the entire supply for the city.

"In view of the reports of the assayers, the active measures taken and being taken by the City of Charlestown, and the present improved condition of the Mystic water, the Cochituate Water Board is led to believe that the late appearance of the Mystic water delivered in East Boston arose from temporary and accidental causes, which will not be likely to occur again, and that it would be unwise and injudicions to break the existing contract with the City of Charlestown, in order to substitute the

Cochituate water for the Mystic water at East Boston, and incur any damage that might result to the City of Boston."

In relation to the foregoing, your commissioners also submit letters received from Chas. H. Allen, Esq., President Cochituate Water Board, and from Jos. P. Davis, Esq., City Engineer, appended, and marked "C" and "D."

From the foregoing it will be seen that Boston is not now, and for the next four years will not be, adequately provided with water; a fact which might well cause alarm to our citizens, were it not that by the proposed annexation we are offered the boon of a copious supply.

MYSTIC LAKE.

From the Eighth Annual Report of the Mystic Water Board, Dec. 31, 1872, pp. 17, 18, 20, 21, we quote: —

"The works are in a very satisfactory condition. By the completion of the new engine, the pumping capacity of the works has been increased nominally to eighteen million gallons in twenty-four hours, but the real capacity is probably rising twenty millions, which is double the former capacity, and about three times the daily average consumption for the past year. At the same time, though the pumping capacity is largely in excess of the average daily consumption, the addition of the new pump to the works was most timely, as during the extreme cold weather the present winter, the daily consumption has been very large, being at one time three millions of gallons more than the capacity of both the old pumps; so that with them alone, we should have been entirely unable to have supplied the demand."

"The average level of the water in the lake has been ten and six-tenths feet above the bottom of the conduit, or eight-tenths of a foot below high-water mark; the extreme variation in the level was one and five-tenths feet.

"The rainfall for the year, as kept at the engine-house, was forty-five and seventy-one hundredths inches, which is the largest for six years, and nearly double that for the years 1870 and 1871, which was only twenty-four and five-tenths inches, — the heaviest being in August, which was eleven and eighty-hundredths inches, or nearly one foot on the level."

"The average depth of water on the overfall at the dam was three inches during the whole year, or about twenty-five millions of gallons daily waste."

"The reservoir and the grounds adjacent are in good condition, also the gate-house and its appurtenances, requiring but few repairs during the year.

"The average depth of water in the reservoir has been twenty-one and seven-tenths feet. The whole number of gallons drawn from the reservoir during the year, was, 2,469,610,719. Average daily consumption, 6,766,056 gallons, an increase per day over that of the previous year of 1,683,084 gallons. The largest amount drawn in twenty-four hours was 12,028,869 gallons, and the smallest, 4,518,154 gallons.

"The relative monthly consumption was as follows: —

"December,	247,047,933	January,	217,364,922	September,	205,982,000
March,	245,432,309	July,	212,740,370	October,	191,614,002
August,	222,615,696	February,	207,600,576	June,	187,440,893
May,	186,901,579	November,	179,631,208	April,	165,239,211"

So far as quantity is concerned, the above fully demonstrates that Mystic Lake can not only furnish the cities and towns now depending upon it, but by the addition of another pump of the same cost and capacity as the one put in operation last year, — cost, $68,250; capacity, 8,000,000 gallons per day, — and laying additional mains to connect with Boston, could also probably satisfy the wants of Boston and all the towns recommmended for annexation besides, at once, and, if necessary, without the use of Cochituate at all. And when the time shall come that Cochituate and Mystic will be insufficient, we are close upon the period when Cochituate and Sudbury will be equally inadequate.

Of the quality of Mystic water, since an intelligent treatment of this topic requires the knowledgs of an expert, your commissioners only submit the following evidence.

From Fourth Annual Report of the State Board of Health. p. 453: —

"*Charlestown* has excellent water from Mystic Pond. The people are however becoming anxious, and as we think with good reason, about the final effect of casting so much refuse into the sources of supply. The Charleston sewers are reported to be in good condition."

From report of the Cochituate Water Board, March 13, 1873, p. 66: —

> "Chemical analyses made in August of last year, by Dr. Hayes of Boston, and Professor Chandler of New York, show the Mystic water to be of excellent quality for domestic use. Although the lake receives a drainage of very objectionable character and amount from a number of manufactories in its vicinity, there can be no doubt that its original purity may be maintained by a proper arrangement of works for intercepting and diverting the injurious matter."

Your commissioners understand that legal measures have been taken to check the evils herein alluded to, with every prospect of success.

In report on supplying the City of Charlestown with pure water, made for the City Council, 1859, we find the following, pp. 68,69: —

> "My opinion is, that the exclusion of sea-water being effected, the supply from Mystic Pond will be of equal purity and desirableness, as that derived from Lake Cochituate, in every respect; and that the projected improvement of introducing this water for domestic purposes is every way judicious and economical.
>
> "With high respect,
>
> "A. A. HAYES, M.D.,
>
> "*Assayer to the State of Massachusetts.*"

Prof. Silliman's report on Mystic Pond, July 17, 1862, contains the following: —

"SUMMARY.

"The researches and statements which have been detailed appear to warrant the following conclusions: —

"1st. Upper Mystic Pond contains water which at the present surface is pure enough for metropolitan supply, but which in depth is unfit for such use, both by reason of its saline character and hardness, and the active corrosion it effects in lead pipes.

"2d. The Abajonna River empties into the head of the Upper Mystic a soft pure water, perfectly adapted for metropolitan supply, ample in quantity, and as free from harmful action with lead as are the waters of Lake Cochituate.

"3d. A dam on the bar dividing the two ponds will effectually cut off contamination from the brackish waters of the Lower Pond, flush the lake with an abundant stratum of pure water, and gradually effect a change in the character of the whole contents of the reservoir."

And from Boston City Document No. 89, 1872, communication from Cochituate Water Board, page 14, we make the following extract: —

"NEW YORK, August 6th, 1872.

"CERTIFICATE OF ANALYSIS.

"SIR: — The samples of Mystic water, from Charlestown, Mass., and marked Mystic water, submitted to me for examination, contain in one U. S. gallon of 231 cubic inches,

Inorganic matter,	4.199	grains.
Organic matter,	1.633	"
Total solids .	5.832	"

This water is of excellent quality.

"Respectfully, your obedient servant,

"(Signed,) C. F. CHANDLER, PH. D.,
"*Professor of Analytical and Applied Chemistry.*

"TO WM. W. PIERCE, ESQ., *Mystic Water Board,*
"*Charlestown, Mass.*"

THE SEVERAL CITIES AND TOWNS CONSIDERED SEPARATELY.

Of most of the cities and towns, in detail, there is but little to add to what may be found in the tables of statistics. With a single exception the benefits to be derived from the annexation of any commenced the reception of the rest.

We would say of the places not named in the order, viz., Chelsea, Everett, Malden, Revere, Winthrop, Watertown and Medford, that the general knowledge of any one acquainted with their locality and the suburbs of Boston, independent of any exact statistical information, would cause him to hesitate before consenting to incorporate any of them at present as a part of our city. It is true that if these, and all intervening, were under the control of Boston, improvements might now be projected, at comparatively little cost, which, adhered to and completed, in years to come would go far toward redeeming the city from its unhappy fame for irregularity of plan and absence of design, but this is rather desirable, than at once expedient. We believe, in the language of the order, that their annexation is only a question of time, but do not think that the time is come for such action.

CAMBRIDGE AND SOMERVILLE.

There having been no legislation calling upon the people of Boston to pass upon the annexation of these cities, as is the case of Charlestown, West Roxbury, Brookline and Brighton, the expression of opinions or arguments by your commissioners in favor of these acquisitions would obviously be wholly gratuitous. We have, however, secured the prepparation of the Tables for these cities quite as fully as for Charlestown and the towns recommended, and we cannot forbear urging a recognition by all interested of the innumerable gains to be derived mutually from the consolidation of these municipalities with the City of Boston.

BROOKLINE, BRIGHTON AND WEST ROXBURY.

In regard to the annexation of these towns, your commissioners are of one mind, both for the reasons set forth in Mr. Hill's report, and others deduced from a knowledge of the facts compiled in the tables appended.

CHARLESTOWN.

Since the undersigned have been led to conclusions differing from those arrived at by Mr. Hill as to the advisability of the annexation of Charlestown to our city, they deem it incumbent upon them to give something of the reasons they have for taking the position they hold. The area of Charlestown we have placed above at 520 acres, and these are the figures returned to the Tax Commission; but they are evidently incorrect, for the assessors lay a tax upon 23,447,220 square feet, and they of course do not include streets, the Navy Yard, State Prison, churches, cemeteries, city buildings, squares, etc. Railroad enterprise is also reclaiming many acres from the sea, and altogether the city probably covers an area of more than eight hundred acres.

The farthest point of this territory is less than two and a quarter miles distant from our City Hall, and substantially the whole population is enclosed in a circle described by a radius from City Hall to Chester Park; while the two City Halls are, in an air line, about a mile apart.

To the purpose, we quote from the argument of the Hon. Ellis W. Morton, on the annexation of Charlestown and Somerville to Boston, before the Committee of the Legislature on Towns, February 27, 1871: —

> "There is an admitted community of interests between the petitioners; they are actually one commercial people, whose business and employment have a common centre in Boston; their prosperity depends upon the same conditions; they are mutually benefited by the municipal enterprises, though unequally taxed, and they are alike injured by the municipal errors or neglect of Boston.
>
> "The Charlestown merchant is nearer his Boston counting-room than the majority of the Boston merchants, and the Somerville-Boston merchant is as prompt at his warehouse as the merchant of the West or South End. Three-fourths of the polls of Charlestown find daily occupation in Boston, and four-fifths of the business men of Somerville have their business in Boston, eight or nine hundred of their names being in the City Directory. The citizens of Charlestown have a more direct interest to-day in the removal of Scollay's building, ordered by the city government of Boston, than a majority of her own people. It appears by the report of the Chief of Police, that November 12, 1870, a day chosen by chance, there passed out from Boston over Charles river and

Warren bridges, between four o'clock P. M. and twelve o'clock, midnight, 12,150 persons."

These figures, coupled with the fact that Charlestown runs into and intercepts our county, afford the most substantial grounds for every argument based upon propinquity of situation.

By act of the Legislature, the City of Charlestown has the exclusive right to take water from upper Mystic Lake; the yield is practically inexhaustible, being estimated at 30,000,000 gallons per day, yet their admirable water works have a capacity equal to two-thirds of this enormous supply. By these means Charlestown has not only procured an abundance of pure water, but — and in this respect it is something unique in municipal enterprise — the city has established and is carrying on a business that is paying a revenue that will eventually extinguish the water debt. Thus they have permanent contracts for the sale of water to East Boston, Chelsea, Somerville and Everett; from these and its own rates the proceeds were last year as follows: —

Boston	$45,397 46
Chelsea	28,475 95
Somerville	19,879 63
Everett	1,818 73
Charlestown	85,672 96
Due to January 1st	20,713 87
Total for year	$201,958 60

To maintain the works for the year ending March 1st, 1873: —

Cost	$63,335 54
To which add interest on Water Bonds . .	77,376 91
Total	$140,712 45

This sum, $140,712.45, taken from income, $201,958.60, leaves $61,246.15; this did not give any surplus, indeed, did not equal the expenditures; for the construction not being completed, $97,071.51 had to be charged to that account; but the construction account was closed on the first day of last January, and all sums expended since that time go to the maintenance account. This, for the six months ending July 1, 1873, amounted to $47,470.41, and it will not average more than this, unless the demand be greatly augmented in the future. Doubling these figures for a year we obtain the following satisfactory result: —

Maintenance account for one year . . .	$94,940	82
Interest on Water Bonds	77,376	91
Total	$172,317	73

Which, taken from the receipts of last year, $201,958 60, leaves a balance of $29,640 97.

But even this is hardly a fair indication of the profits; for the maintenance would be unusually heavy for the first year after closing the construction account, and the return will undoubtedly constantly increase.

In connection with this it may be mentioned that the rates in Charlestown are less than in Boston or Cambridge; thus, they charge for one closet only to each tenement-house, however many there may be in fact; and to large consumers their rates are three cents per 100 gallons, for the first 5,000 gallons used in a quarter, consisting of seventy-five days; and above this, as the quantity increases, the rate diminishes to two cents per 100 gallons, or only two-thirds the price in Boston or Cambridge, where the rates are uniformly three cents.

The debt contracted for the construction of these works amounts to $1,461,259.41, nearly the whole of which is represented by bonds to run from ten to thirty years from date, over $400,000, bearing five per cent. interest, and none more than six, all interest payable in currency.

That such a reserve as this for the City of Boston would preclude the possibility of a water famine need not be urged, while without it the calamities of an hour may teach our people the dangers of relying upon a single source, and that the only way in which Boston can, with safety, dispense with this species of "foreign aid" is by making it domestic.

Charlestown has a water-front of nearly three miles in extent, measuring around the city in an unbroken line. Of this the Navy Yard occupies about 4,600 feet. If the length of wharves be computed, it will add nearly two and a half miles more, and improvements now being carried forward are rapidly expanding the available wharf privileges; and this suggests some consideration of the terminal conveniences which the city offers to railroad companies for handling their freight; opening to them an easy access to the finest wharves in the harbor.

Some corporations have seen and taken advantage of this: — The Boston, Lowell and Nashua have already expended about $300,000 in the improvement of their purchase from the Mystic River Corporation, and contemplate a further outlay of $700,000; this will reclaim over thirty acres, and give them a water-line of forty-five hundred feet, to which a draw through Chelsea Bridge would add two thousand five hundred feet more. This work is of the most substantial character, the wall being of stone, averaging twenty-three feet in height, twelve feet in thickness at the bottom, and four at the top, around the outside of which a belt of wooden wharves, thirty feet wide, on piles, is to be constructed, so that dredging close up to them does not weaken the walls. The dredging is continued to a depth of twenty-four feet. On a part of this wharf completed, the current business by the road last year was over 50,000 tons, and this year it will be twice that. The deviation to the end of the wharf is only two miles from the line of the road, while on some of the roads terminating in Boston the freight has to be drawn nine or ten miles around to East Boston for shipment.

The Mystic River Corporation have projected and begun work upon betterments similar to those of the B., L. & N. R. R., though more extensive, and will recover about sixty acres, with a front a little broader than that of the railroad. The River Corporation reserve a connection with the railroad, and a track will run quite around their wharf, and, from its situation, it is altogether likely that some railroad company will, at no distant day, become the owner of this property.

The Fitchburg Railroad now has a terminus in Charlestown.

The Eastern has taken 400,000 feet near the centre of the city, on which they purpose erecting a freight depot. This company will spend about $750,000 here, and it is probable that the heavy business growing out of the system of consolidation cultivated by this road will render the accession by it of the State's prison lands desirable, or absolutely necessary, when that institution is removed, in accordance with the legislation of last winter.

These data seem to warrant the conclusion that Charlestown will become, and even now is, a principal channel through which sets the ebb and flow of a broad and extensive internal, coast and foreign trade, bearing on its current the freight of the Dominions, the Northern and New England States, and a share of that of the West.

The statistics show that our exports have nearly doubled during the past two years, caused principally by the augmented facilities for the shipment of grain ; and the greater improvements in this respect anticipated by the B., L. & N. R. R., the Mystic River and other corporations, the building of wharves and elevators, and the early completion of the Hoosac and its connections, unerringly foretell that Boston is destined to take front rank for the exportation of the heightened products of the country.

For the furtherance and attainment of this, Charlestown affords invaluable accommodations, and a large portion of her territory will ultimately be devoted to the objects indicated.

To encourage, protect, and fully develop, therefore, every material aid, it is, in the opinion of your commissioners, of the first importance that that territory should be a part of and controlled by the City of Boston. The business will require wide wharves, safe docks, harbor, fire and police departments, broad and solid avenues, substantial bridges; and, in general, works of a character and on a scale which a small municipality could not, and in this instance ought not to, provide, and which can only be secured by the union of the two cities.

From the argument of Hon. G. W. Warren, before the Legislative Committee on Towns, May 4th, 1870, we quote, in connection: —

"The union of Charlestown and Somerville with Boston will not only create property by causing an enhancement of values, but it will give new impulse to business, and develop the resources of the State. Hitherto the annexation has been to the south; this is well, and there is room for more there. But it is time that Essex and this part of Middlesex derived a benefit from being brought nearer to Boston. Wakefield, by a corporate vote, has signified her wish; and the popular sentiment in other towns is equally decisive. There are some who would limit the growth of Boston to the south of Charles River, and shut out from her jurisdiction a large portion of the deepest water of Boston harbor and the shores of the Mystic. In this way commerce is depressed, and wharf property is depreciated. The Navy Yard should be in Boston, that it may be enlarged. Unless the proper measures are promptly taken, other Navy Yards will be increased, and this will be neglected. [See extract from 'N. Y. Herald,' and testimony of the Hon. A. H. Rice, late chairman of Congressional Committee on Naval Affairs.]

"On this side are the freight depots of the Tunnel Line, and also extensive accommodations are prepared for the Lowell and the Eastern

Railroads. By placing these in Boston, merchandise will be shipped here which otherwise might be diverted to other seaports. This is not mere supposition, but actual fact.

"The natural growth of Boston ought not to be limited in any direction. In the history of flourishing cities, the commercial river is not a natural boundary, but a connecting link. The opposing idea of grouping half-a-dozen municipalities on both sides of the Mystic into one with Charlestown for its centre would be a great mistake. It would detract so much from Boston. It would be the height of folly to attempt to build up a rival city opposite to Boston, when Boston with all you can give her, and all we may hope she will become, will scarcely be able to cope successively with other competing cities. Besides, these municipalities do not wish this kind of annexation; they prefer union with Boston.

"Boston is the only seaport that can court for you the commerce of the world; it is the only mart you have to which will come the freight from the western roads. At Chicago and other railroad centres in the West, it is about the same to send to Baltimore, Philadelphia, New York or Boston. The choice depends upon the means of transit, and upon the consideration with which one city or the other is held by the shipping merchant, and this depends upon the statistics he has of the population and growth of the different cities. You wish to realize the advantage of the railroads you have fostered, and to complete the unfinished lines; and will you not enlarge the bounds of your capital, that it may include the depot lands at their termini, and all commercial facilities connected with them, and all the population?

"The great need of a city is ample space and territory on which to spread in all directions. Let us learn from the experience of the past. How many Boston merchants have removed to other cities to find a wider field? How many enterprising Massachusetts men have established themselves in other capitals where they found a better opinion? They seek for a place of business and a suitable residence both in the same city, and not finding these requisites, many have gone to cities endowed with larger territory. Boston has not anything like the territory of her rivals, nor even the average territory of the large towns of the State.

"Grant to Boston this means of growth, and there will be no limit to her prosperity. This prosperity will promote the prosperity of the rest of the State. That of Salem, Newburyport, Lowell and Cambridge will be stimulated by this measure, as other towns and cities will be advanced by their growth. The advance or decline of the State in comparison with other States depends upon the fate of her capital. Their interests are not antagonistic, as some politicians will have it, but they are identical."

The above allusion to the Navy Yard suggests the reflection that exempting so large an area from taxation is an injury only to a city so limited, that it crowds out people who would otherwise be residents, and if Charlestown had enough other available lands, this institution would be no more a burden to that city than is the Common to Boston, and annexation will cure the evil in this quarter which they experience; besides, Boston cannot afford to do without the yard, for nothing else would so ensure prompt and liberal appropriations from the General Government for the protection of our harbor.

In detail, it can be said that Charlestown is already provided with water, paved streets, sidewalks, City Hall, police station, engine-houses, school-houses, library, public baths, fire department, fire alarm, sewerage, and generally all the necessities possessed by any ward in Boston, and comparatively little extra expenditure will be incurred in consequence of this annexation. Such action would add largely to our population and wealth, and thus to our commercial importance. As to the citizens so received, it is interesting to notice how favorably Charlestown compares with every other city and town embraced in the order.

The following table is from the U. S. Census of 1870: —

Populations, from the Census of 1870.

	Total Population.	Native.	Foreign.	Colored.
Boston	250,526	162,540	87,986	3,496 *a*
Somerville	14,685	10,553	4,132	26 *b*
Brighton	4,967	3,361	1,606	64
Cambridge	39,634	27,579	12,055	848 *c*
West Roxbury	8,683	6,021	2,662	58
Brookline	6,650	4,357	2,293	23 *d*
Charlestown	28,323	21,399	6,924	127

a 12 Indians, 5 Japanese. *b* 1 Chinese. *c* 1 Indian. *d* 1 Chinese.

Finally, your commissioners believe that the future of Boston is, to a great degree, involved in the questions herein presented.

Their principal reasons for advocating the annexation of the city and towns recommended may be briefly summarized: —

The protection of public health, by organizing under one head a general system of sewerage, demands it; an abundance of water from independent sources will be thus obtained; concert of action in projecting improvements of mutual benefit will be secured; territory for houses at moderate cost within the city's limits will be acquired; opportunities to foster and encourage our foreign trade by rendering substantial aid, and facilities afforded; increased wealth and numbers will give us additional consideration; and a people whose objects, ventures, and interests are identical will be brought together under one municipal government.

The progress of a community depends not upon felicity of site, fertility of soil, nor the command of natural resources. If it did, the cities of Mexico and St. Augustine would not be more celebrated for their age than development, and Boston, without a mile of navigable internal water system, the metropolis of a country "that relies for its natural exports upon the rigor of its climate and the hardness of its soil," would not be constantly crowded for room. The enterprise of a people is the controlling factor to solve the problem of their destiny, and its unceasing exercise the sure guaranty of unlimited prosperity.

Respectfully submitted,

WESTON LEWIS.
L. FOSTER MORSE.

Boston, September 18, 1873.

STATISTICS.

STATISTICS RELATING TO THE CITY OF CAMBRIDGE.

AREA — not including Streets? 2,983 acres. Area of Streets? 477 acres. Percentage of improved lands for streets? 18.3.

" Upland? 2,415 acres.

" Marsh or Lowlands? 1,046 acres.

" Reserved for Parks or Squares? 1 common, containing 359,936 sq. ft.

" Improved? All.

" Unimproved?

Miles of Streets? 75.

Paved? About 2 miles.

Macadamized? About 12 miles.

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Streets? . .	$39,918 88	$96,576,78	$149,509 54	$168,113 81	$153,242 35
Do. laying out and widening Streets? . .			47,970 61	76,550 65	22,903 57
Miles of Sewers? 40.07					
Am't exp'd on Sewers?	10,793 64	35,106 23	115,191 57	35,286 24	72,356 27 *a*

With these sums might appropriately be given the expense of maintaining the bridges by which Cambridge is connected with neighboring cities and towns. There are seven bridges in all; viz., to Boston, 2; Brighton, 3; Brookline, 1; Charlestown, 1. The cost of maintaining the City Cemeteries and Public Squares is also offered.

Amount Expended.	1870.	1871.	1872.
For care and maintenance of Bridges	$13,000 00	$97,544 97	$19,537 90
" " " " " Cemeteries	11,012 96	9,437 81	10,710 38
" " " " " Public Squares . . .	3,401 57	2,366 95	2,430 99

Line of Sewerage? Principally Charles River; small lines into Miller's River Basin and Alewive Brook.

	1864.	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	$23,271,500 00	$28,385,700 00	$34,093,800 00	$43,097,200 00	$55,248,350 00	$62,421,215 00
Number of Polls? . .	6,289	7,253	8,196	9,435	10,867	11,687
" Dwellings?	. . . .	. . . .	. . . .	. . . .	6,628	7,056
" Legal Voters?	. . . .	. . . .	. . . .	. . . .	. . . .	6,338

	1860.	1865.	1870.	1872.
Population?	26,060	29,114	39,634	Estimated at 45,000

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a City Engineer's Report says $78,630.37. Whole amount expended for sewers and drains by city, to Nov. 30th, 1872, $387,644.98.

	1866.	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation? . . .	$389,237 24	$486,886 44	$622,216 80	$748,682 40	$684,714 20	$844,956 91
City or Town? . . .	293,562 40	413,214 43	533,544 40	660,000 00	592,165 46	741,500 00
County?	20,044 84	23,252 01	25,647 40	25,657 40	33,968 74	37,554 41
State?	75,630 00	50,420 00	63,025 00	63,025 00	58,580 00	65,902 50
Rate per Thousand? .	13 20	13 80	14 00	15 60	12 00	13 50

Debt of? $2,184,584.42. See also note at foot of Table.
" when due? See Table.
Rate of Interest? "
Water Supply? Water Works at Fresh Pond.
If Water Works, Capacity? 5,000,000 galls. per day.
Cost? $1,030,384.86. Not yet completed. Authorized to issue bonds to the amount of $1,500,000.
Fire Department — Number of Engines, etc.? 5 Steamers, 1 Hand Engine, 7 Horse Hose Carriages, 1 Hand Hose Carriage, 2 Fuel Wagons, 1 H. & L. Carriage, 8,100 ft. of Hose, Ladders, Chains, etc.; 5 Engineers, 79 Men, and 5 Fire Police; 15 Horses, 40 Boxes, 4 Bell Strikers, 51 Reservoirs, 335 Hydrants.
Fire Alarm? Telegraph.
Expense, 1872? $42,373.56.
Number of Police? 47.
Cost of Police Department for 1872? $58,293.28.

	1871.	1872.	1873.
Number of Arrests	1,695	1,875	1,687

	High.	Gramm'r.	Primary.	
No. of Public Schools, 1872? 29	1	8	19	1 Training School.
" " Seats for Pupils, " . .	310	3,811	4,395	6 Evening Schools.
Average Attendance, " . .	279	2,774	2,879	1 " Draw'g School
Cost of Teaching per Scholar? $19.33	$50 43	$19 97	$14 63	1 School at Almshouse.

Number of Children from 5 to 15 years of age, in 1872? 8,260.
Estimated Value of Public School Property, in 1872? No late estimate; area of land occupied, 279,043 sq. ft.
Total Value of Public Property? Has been no estimate since 1864, when it amounted to $639.400. The present area, however, of all lands owned by the city, within its limits, built upon and vacant, is 1,552,211 sq. ft. This does not include the old cemetery, containing 77,452 sq. ft., nor the new cemetery, having an area of 40.8 acres. Outside of the city is the City Farm, in Somerville, 1,374,666 sq. ft., and the gravel bank in Belmont, 471,148 sq. ft. *a*
Value of Property Exempted from Taxation, in 1872?
Public " " " " "
Private " " " " "

Has never been estimated. To the above city property must be added the County and State Institutions mentioned below, a part of Mt. Auburn Cemetery, Catholic Cemetery on Spruce Street, twenty-seven Churches, and the greater portion of Harvard College property, the area of which, not taxed, is about 63 acres. *b*

Public Institutions?
City or Town? City Hall, Almshouse, Dana Library, Hospital for Contagious Diseases, connected with Almshouse.
County? Court House and Jail.

State? Arsenal at Old Cambridge, Powder House, and Captain's Island.
Number of Residents doing business in Boston?
Communication with Boston? Two Bridges.
Steam Railroads? B. L. & N. and Fitchburg.
Street " Union.
Otherwise? Ordinary Conveyance.
Number of Passengers carried per year? Over 4,000,000.
Industrial Pursuits? Engine and Boiler Manufactories, Brass Foundries, Glass Manufactories, Chemical Preparations, Printing, and nearly all other ordinary pursuits. There are 7 National and 4 Savings Banks.
Streets, how Lighted? By Gas principally, some Burning Fluid.
Number of Lamps? 627.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	$11,605 70	$12,723 31	$13,220 57	$17,043 29	$14,146 69

If Gas, Rate paid? By Citizens, $3.25 per 1,000 feet. City pays 1 ct. per hour for 4 feet burners in Street Lamps.
Number of Paupers? 86.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	700	686	855	863	1,129

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[a] Massachusetts House of Representatives, Document No. 66, 1872. "Assets and Indebtedness of Cities and Towns." Cambridge—Assets, $59,673.62. Liabilities, $1,546,400.

[b] Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-taxable Property held for Religious or Charitable purposes in the several Towns and Cities." Cambridge—Meeting-houses, $920,000.00. Educational Institutions other than Public Schools, $4,194,578 00. Total, $5,114,578.00.

Account of City Debt, December 1, 1872.

Date.	Rate.	To whom payable.	When payable.	Interest paid to.	Amount.	Total.
April 6, 1857.	$5\frac{3}{4}$	Lowell Institution for Savings	April 6, 1877.	Oct. 6, 1872.	$30,000 00	
July 1, 1858.	5	Cambridge City Bonds	July 1, 1878.	July 1, 1872.	7,000 00	
July 1, 1859.	5	" " "	July 1, 1879.	July 1, 1872.	15,000 00	
July 1, 1862.	5	" " "	July 1, 1872.	July 1, 1872.	1,000 00	
Aug. 1, 1862.	5	" " "	Aug. 1, 1882.	Aug. 1, 1872.	30,000 00	
Sept. 10, 1862.	5	" " "	Sept. 10, 1882.	Sept. 10, 1872.	40,000 00	
Sept. 10, 1862.	5	" " "	Sept. 10, 1877.	Sept. 10, 1872.	30,000 00	
Nov. 20, 1862.	5	" " "	Nov. 20, 1882.	Nov. 20, 1872.	14,000 00	
March 5, 1863.	5	" " " (Gold)	Jan. 1, 1893.	July 1, 1872.	150,000 00	
April 1, 1864.	5	" " "	April 1, 1889.	Oct. 1, 1872.	100,000 00	
July 1, 1870.	6	" " "	July 1, 1890.	July 1, 1872.	20,000 00	
June 2, 1871.	....	Cambridge City Note	June 2, 1874.	June 2, 1872.	10,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	10,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	10,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	10,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	10,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	7,000 00	
June 2, 1871.	....	" " "	June 2, 1874.	June 2, 1872.	5,000 00	
July 1, 1871.	....	Cambridge City Bonds	July 1, 1876.	July 1, 1872.	100,000 00	

July 1, 1871.	. . . .	" " "	July 1, 1881.	July 1, 1872.	100,000 00
July 1, 1871.	. . . .	" " "	July 1, 1886.	July 1, 1872.	100,000 00
July 1, 1872.	. . . .	" " "	July 1, 1882.	. . . .	15,000 00
Nov. 1, 1870.	8	Mary Waller	Nov. 1, 1875.	Nov. 1, 1872.	3,200 00
May 1, 1872.	10	" "	May 1, 1875.	Nov. 1, 1872.	800 00
Oct. 10, 1872.	7	Cambridge City Note	Oct. 10, 1873.	. . . .	100,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 10, 1872.	7	" " "	Jan. 10, 1873.	. . . .	5,000 00
Oct. 31, 1872.	7	" " "	March 3, 1873.	March 3, 1873.	5,000 00
Oct. 31, 1872.	7	" " "	March 3, 1873.	March 3, 1873.	5,000 00
Oct. 31, 1872.	7	" " "	March 3, 1873.	March 3, 1873.	5,000 00
Nov. 2, 1872.	7	" " "	March 5, 1873.	March 5, 1873.	25,000 00
Nov. 11, 1872.	7	" " "	May 14, 1873.	May 14, 1873.	20,000 00
Nov. 25, 1872.	7	" " "	Jan. 28, 1873.	Jan. 28, 1873.	10,000 00
Nov. 25, 1872.	7	" " "	Jan. 28, 1873.	Jan. 28, 1873.	10,000 00
Nov. 25, 1872.	7	" " "	March 3, 1873.	March 3, 1873.	10,000 00
Nov. 13, 1872.	7	" " "	Mch. 16, 1873.	Mch. 16, 1873.	10,000 00
		Amount carried forward	. . . .	. . . .	

ACCOUNT OF CITY DEBT, *Continued.*

Date.	Rate.	To whom payable.	When payable.	Interest paid to.	Amount.	Total.
		Amount brought forward	. . . .	. . . .		
June 30, 1872.	7	Cambridge City Note	On demand.	. . . .	35,525 17	
Nov. 30, 1872.	7	" " "	On demand.	. . . .	40,110 51	$1,128,635 68
July 1, 1856.	6	Cambridge Water Bonds	July 1, 1881.	July 1, 1872.	50,000 00	
May 1, 1865.	6	" " "	May 1, 1875.	Nov. 1, 1872.	186,400 00	
Aug. 1, 1865.	6	" " "	Aug. 1, 1883.	Aug. 1, 1872.	55,000 00	
July 2, 1866.	6	" " "	July 2, 1886.	July 2, 1872.	100,000 00	
April 1, 1867.	6	" " "	April 1, 1888.	Oct. 1, 1872.	150,000 00	
April 1, 1868.	6	" " "	April 1, 1888.	Oct. 1, 1872.	175,000 00	
May 1, 1869.	6	" " "	May 1, 1889.	Nov. 1, 1872.	112,000 00	
July 1, 1870.	6	" " "	July 1, 1890.	July 1, 1872.	60,000 00	
May 1, 1871.	6	" " "	May 1, 1891.	Nov. 1, 1872.	50,000 00	938,400 00
Oct. 1, 1863.	6	Trustees Daniel White Charity	. . . .	Oct. 1, 1872.	5,000 00	
June 1, 1858.	6	Trustees Dowse Institute Fund	. . . .	June 1, 1872.	10,000 00	
Oct. 8, 1864.	6	Trustees Sanders Temperance Fund	. . . .	Oct. 8, 1872.	10,000 00	25,000 00
		State Tax	Dec. 1, 1872.	. . . .	58,580 00	
		County Tax	Dec. 31, 1872.	. . . .	33,968 74	92,548 74
						$2.184,584 42

The debt has been increased this year, up to September 1st, about $500.000.

There is a sinking fund for the payment of the water debt, which now amounts to $131,072.67; and another fund, for the payment of other indebtedness, which now amounts to $40.110.51; but as the city has borrowed both of these funds, the Committee on Finance think they ought not to be subtracted to show the true indebtedness. From the report, however, the Commissioners think it possible that the committee may be mistaken in this.

STATISTICS OF THE CITY OF SOMERVILLE.

AREA — not including Streets? 2,362 acres.
" Upland? 2,312 "
" Marsh or Lowlands? 50 "
" reserved for Parks or Squares? 13 " 1,603.6 ft., on which City Hall and Engine Houses stand.
" Improved, as a Park or Square?
" Unimproved? The above lot.
Miles of Streets? 70 to 75.
Paved?
Macadamized? ¾ of all.

	1868.	1869.	1870.	1871.	1872.
Amount expended on repairs of Streets? .	......	......	......	$43,394 10	$61,934 98
Do. laying out and widening Streets? .	......	......	......	......	......
Miles of Sewers? 11 .	......	......	......	......	......
Am't exp'd on Sewers?	......	......	......	26,364 22	29,079 59

Line of Sewerage? Miller's River.

	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	......	$9,374,150 00	$12,590,900 00	$22,755,325 00	$29,619,100 00
Number of Polls? . .	......	2,688	3,406	4,105	4,895
		Dwellings.	Dwellings.	Dwellings.	Buildings.
" " Buildings?	......	1,779	2,276	3,061	4,186
" Legal Voters?	......	......	......	1,998	......

	1860.	1865.	1870.
Population?	8,205	9,353	14,685

	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation?	$183,484 85	$181,872 22	$260,460 95	$303,204 67	$388,914 48
City or Town?	......	161,600 00	240,198 75	274,830 22	357,198 77
County?	......	5,872 22	5,862 72	10,414 45	11,510 71
State?	......	14,400 00	14,400 00	17,960 00	20,205 00
Rate per Thousand? .	19 00	14 20	16 20	13 00	12 80

Debt of? (See Table,) $643,354, to which add unfunded liabilities, $161,439.88. Increase for present year to Sept. 1st, $90,000. Total debt, $894,793.88.
Debt, when due? (See Table.)
Rate of interest? " "
Water Supply? Furnished by Charlestown from Mystic Lake.
If Water Works, Capacity? Taking from Charlestown Works, it may be said to have their full capacity, 20,000,000 gallons per day.
Do. Cost? $245.686.76.

Fire Department — Number of Engines, etc.? 1 Steamer.
5 Horse Hose Carriages.

Expense, 1872? $18,087.61.
Fire Alarm? Ordinary Bell-ringing.

On Winter, Prospect, Spring and School-house Hills, not over 20 lbs. pressure of water.
Number of Police? 20.
Cost of Police Department for 1872? $15,476.67; 6 men put on this year.
Number of Arrests? In two months, April and May, 95.

	High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872?	1	36*	22*
" " Seats for Pupils "	200	2,000	1,100
Average Attendance, "	146.7	1,398.2	1,052.9
Cost of Teaching, per Scholar "	$35 00	$20 00	$20 00

Number of Children from 5 to 15 years of age, in 1872? 2,932.
Estimated Value of Public School Property " $299,890.34. Have just closed a contract for another school-house to cost $60,000.
Total Value of Public Property " $731,267.77. The city has also available assets to the amount of $139,776.67. *a*
Value of Property Exempt from Taxation "
Public " " " " "
Private " " " " 11 Churches, Insane Asylum, part of Tufts College and 1 Cemetery. *b*
Public Institutions?
City or Town? City Hall and Library of about 3,000 vols. in a room in City Hall.
County?
State?
Number of Residents doing business in Boston? Majority of the business men.
Communication with Boston? Bridges.
Steam Railroads? Eastern, B. & M., Fitchburg, B. L. & N.
Street " Middlesex and Union.
Otherwise? Ordinary conveyance.
Number of Passengers carried per year? 1,930,762.
Industrial Pursuits? Calico and Mousselaine Printing, Spike Factory, Glass Manufactory, Tube Works, Brick Manufacturing, and other ordinary pursuits. No Bank.
Streets, how Lighted? By Gas and Kerosene — nearly all Gas.
Number of Lamps? 250.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	. . . . . .	. . . . . .	. . . . . .	$6,417 28	$6,809 24

If Gas, Rate paid? To Charlestown, $3.00 per 1,000 ft. for private use, a discount for Street Lamps; to Cambridge, $3.25 per 1,000 ft. for private use, and 1⅜ cents per hour for Street Lamps, for burner of five feet per hour.
Number of Paupers? City has no Almshouse; boards 9 in other towns, and renders assistance to about 125 others.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

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* This does not mean buildings, but classes or divisions.

a Massachusetts House of Representatives, Document No. 66, 1872. "Assets and Indebtedness of Cities and Towns." Somerville — $558,219.08. Liabilities, $510,849.00.

b Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable Property held for Religious or Charitable purposes in the several towns and cities." Somerville — Meeting-houses, $202,100.00. Other Charitable Associations, $700,000.00.

TABLE B.

Funded Debt, December 31, 1872.

Date.	Loan.	Rate per cent. of Interest.	When due.	Amount.
April 1, 1870	Water Bond, No. 5	7	April 1, 1873	$20,000
Dec. 1, 1869	Town " No. 2	7	Dec. 1, 1874	35,000
" "	School " No. 1	7	" "	27,000
Jan. 1, 1869	Water " No. 1	6½	Jan. 1, 1879	10,000
" "	" " No. 2	6½	" "	10,000
" "	" " No. 3	6½	" "	10,000
July 1, 1872	City " No. 2*	5½	July 1, 1879	5,454
Oct. 1, 1859	Town " No. 1	5½	Oct. 1, 1879	14,400
July 1, 1870	" " No. 3	6½	July 1, 1880	55,000
Oct. 1, 1870	" " No. 4	6½	Oct. 1, 1880	21,500
" "	Water " No. 6	6½	" "	40,000
Dec. 31, 1870	" " No. 7	6½	Jan. 1, 1881	20,000
" "	Town " No. 5	6½	" "	5,000
" "	School " No. 2	6½	" "	3,000
April 1, 1871	" " No. 3	6½	April 1, 1881	60,000
Oct. 1, 1871	Water " No. 8	6½	Oct. 1, 1881	10,000
" "	" " No. 9	6½	" "	10,000
" "	" " No. 10	6½	" "	10,000
" "	" " No. 11	6½	" "	10,000
" "	Town " No. 6	6½	" "	10,000
" "	" " No. 7	6	" "	2,000
" "	" " No. 8	6½	" "	11,500
" "	School " No. 4	6½	" "	25,000
April 1, 1872	City " No. 1	6½	April 1, 1882	17,500
July 1, 1872	" " No. 3	6½	July 1, 1882	5,000
" "	" " No. 4	6½	" "	5,000
" "	" " No. 5	6½	" "	10,000
" "	" " No. 6	6½	" "	10,000
" "	Water " No. 12	6½	" "	50,000
" "	" " No. 13	6½	" "	40,000
" "	City " No. 8	6½	" "	10,000
" "	" " No. 9	6½	" "	5,000
" "	" " No. 10	6½	" "	10,000
Oct. 1, 1872	" " No. 11	6½	Oct. 1, 1882	5,000
" "	" " No. 12	6½	" "	5,000
July 1, 1872	" " No. 7*	5½	July 1, 1884	20,000
Oct. 1, 1872	" " No. 13*	6	Oct. 1, 1884	6,000
" "	" " No. 14*	6	" "	5,000
" "	" " No. 15*	6	" "	5,000
" "	" " No. 16*	6	" "	5,000
" "	" " No. 17*	6	" "	5,000
				$643,354

* Substituted for Note of the Town.

Increase of Debt during present year, to September 1st, about $90,000.

Unfunded liabilities, $161,439.88.

STATISTICS RELATING TO THE TOWN OF WEST ROXBURY.

AREA — not including Streets? 6,627 1-2 acres.
" Upland? 6,500 "
" Marsh or Lowlands? 127 1-2 "
" Reserved for Parks or Squares? One triangular piece of about 6,500 square feet.
" Improved? The above piece.
" Unimproved?
Miles of Streets? Between 80 and 90.
Paved?
Macadamized? About 5 or 6 miles.

	1868.	1869.	1870.	1871.	1872.
Amount expended on repairs of Streets? .	$16,020 98	$26,937 13	$22,317 46	$33,851 38	$34,314 48
Do. laying out and widening Streets? .	7,045 03	8,534 26	8,043 13	37,308 75	74,954 91

Miles of Sewers? About 900 feet exclusive of Stony Brook and its tributaries.
Amount expended on Sewers? 1871, $5,720.16. On Stony Brook the Town has expended $30,297 70.
Line of Sewerage? Stony Brook and its tributaries.

	1864.	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	$8,504,600 00	$9,878,800 00	$10,302,600 00	$12,437,100 00	$22,507,350 00	$22,148,600 00
Number of Polls? .	1,454	1,680	1,834	2,081	2,514	2,515
" " Dwellings?	1,072	1,114	1,183	1,339	1,673	1,754
" Legal Voters?	. . . .	. . . .	. . . .	. . . .	. . . .	About 1,700

	1860.	1865.	1870.
Population	6,310	6,912	8,683

	1866.	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation?	$116,351 89	$115,737 57	$204,538 25	$236,133 25	$250,502 51	$190,477 96
City or Town? . . .	79,665 00	87,875 00	169,274 00	200,869 00	219,510 21	. . . .
County?	7,316 89	8,282 57	10,789 25	10,789 25	12,632 30	14,211 33
State?	29,370 00	19,580 00	24,475 00	24,475 00	18,360 00	20.880 00
Rate per Thousand? .	10 30	9 40	15 00	8 50	10 30	8 60

Debt of? $478,000.00 to Sept. 1st, 1873. $200,000.00 of it created this year.
" when due? About $28,000 annually.
Rate of Interest? $20,000 at 6 per cent.; $100,000 at 6 1-2, and all the rest at 7 per cent.
Water Supply? Wells, cisterns, and reservoirs.
If Water Works, Capacity?
" " Cost?

Fire Department — Number of Engines, etc.? 2 Steamers.
2 Hand Engines.
4 Hose Carriages, 2 attached to Steamers, 2 drawn by horses separately.
Hook and Ladder Carriage.

Expense, 1872? $9,136.66.
Fire Alarm? Telegraph; 16 Boxes, 1 Bell-striker.
Number of Police? 10.
Cost of Police Department for 1872? $10,573.26.
Number of Arrests during 1872? 368.

	High.	*Grammar.*	*Primary.*	*Evening.*
Number of Public Schools, 1872? . .	1	4	18	2
“ “ Seats for Pupils, “ . .	100	948	1,080	
Average Attendance “ . .	79	710	607	

Cost of Teaching, per Scholar, 1872? Average in all the Schools, $22.50.
Number of Children from 5 to 15 years of age, in 1872? 1,620.
Estimated Value of Public School Property, “ $265,000.
Total Value of Public Property, “ $500,000 or more. *a*
Value of Property Exempted from Taxation, “
Public “ “ “ “ “
Private “ “ “ “ “
[The Public Property above mentioned; also, 11 Churches and 8 Cemeteries; a fair value for all is $600,000 exclusive of the Cemeteries. *b*]
Public Institutions? Agricultural Department of Harvard College.
City or Town? Town Hall; Free Library.
County?
State?
Number of Residents doing business in Boston? More than two-thirds of the business men.
Communication with Boston? Steam and Horse Railroads and Highways.
Steam Railroads? Boston & Providence.
Street “ Metropolitan, by two routes.
Otherwise?
Number of Passengers carried per year? Over 1,500,000.
Industrial Pursuits? Tanning and Currying, India Rubber, Ice Cutting, Farming, Gardening, and ordinary occupations. 1 Savings Bank, — has been in operation less than a year. Has over 100 depositors, and more than $10,000 on deposit.
Streets, how Lighted? By Gas and Kerosene.
Number of Lamps? About 375; 188 Gas, and the rest Kerosene burning.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	$4,642 27	$4,845 44	$6,398 27	$8,294 22	$9,491 18

If Gas, Rate paid? By City, for Street Lamps, $27.00 for each Lamp per year, equal to about $3.00 per 1,000 feet. Private Consumers pay $4.00 per 1,000 feet.
Number of Paupers? Averaged 10 last year. 69 families, representing 202 persons, received partial assistance.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	126	117	105	118	170

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a Massachusetts House of Representatives, Document No. 66, 1872. "Assets and Indebtedness of Cities and Towns." West Roxbury — Assets not given. Liabilities, $125,000 00.

b Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable Property held for Religious or Charitable purposes in the several towns and cities." West Roxbury— Meeting-houses, $115,000.

STATISTICS RELATING TO THE TOWN OF BROOKLINE.

AREA—not including Streets? About 4,000 acres.
" Upland? 3,500 acres.
" Marsh or Lowlands? 500.
" reserved for Parks or Squares? Two lots: one containing over 228,670 square feet; the other 166,899.
" Improved? The larger of the above lots.
" Unimproved? The smaller of the above lots.
Miles of Streets? About 37.
Paved?
Macadamized?

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Streets? . .	$23,627 74	$22,601 15	$36,728 04	$49,635 94	$54,591 57
Do. laying out and widening Streets? .	3,178 89	12,799 95	36,509 81	49,146 89	110,861 32
Do. on Sidewalks? .	1,469 99	12,405 76	16,045 16	17,185 91	19,741 72
Miles of Sewers? . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	About three miles.
Am't exp'd on Sewers?	3,694 15	48,742 72	45,977 00	574 00	9,458 17

Line of Sewerage? At present Muddy River, but the lines are to be turned into Charles River principally.

	1864.	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	$9,667,800 00	$10,175,800 00	$14,870.700 00	$18,948,300 00	$29,413,914 00	$28,476,000 00
Number of Polls? . .	1,058	1,216	1,370	1,415	1,586	1,665
" " Dwellings?	693	706	804	876	971	1,000
" Legal Voters?	. . . .	. . . .	. . . .	. . . .	1,047	1,150

	1860.	1865.	1870.
Population?	5,164	5,262	6,650

	1866.	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation?	$104,190 00	$124,679 97	$144,942 25	$205,577 09	$259,073 05	$408,068 51
City or Town? . . .	. . . .	116,070 64	105,859 81	166,494 65	218,301 22	362,800 20
County?	. . . . .	9,179 36	11,957 44	11,957 44	16,511 83	18,575 81
State?	32,550 00	21,700 00	27,125 00	27,125 00	24,260 00	27,292 50
Rate per Thousand .	10 00	6 20	7 50	9 70	8 70	11 50

Debt of? See Table.
" when due? " "
Rate of Interest? "
Water Supply? Wells, cisterns, and reservoirs.
If Water Works, Capacity?
" " Cost?

Fire Department — Number of Engines, etc.?	1 Steamer. 1 Hand Engine. 1 Hose Carriage. 1 Hook and Ladder Carriage.

Expense, 1872? $4,011.65. At which time they had no Steamer.
Fire Alarm? Ordinary Bell-ringing.
Number of Police? 12.
Cost of Police Department for 1872? $13,088 40.

	High.	*Grammar.*	*Primary.*	*Evening.*
Number of Public Schools, 1872? . .	1	3	15	1
" " Seats for Pupils, " . .	85	650	675	. . . . . .
Average Attendance?	80	315	534	. . . . . .

Cost of Teaching, per Scholar, 1872? About $30.00 on an average in all the Schools.
Number of Children from 5 to 15 years of age, in 1872? 1,200.
Estimated Value of Public School Property " $200,176 00.
Total Value of Public Property " $661,938 70. *a*

In addition to the above there are 8 Churches and 2 Cemeteries; one public, belonging to the town, containing 4 1-2 acres, the other private, Catholic.

Value of Property Exempted from Taxation in 1872? *b*
Public " " " " "
Private " " " " "
Public Institutions?
City or Town? Town Hall. Library valued at $75,000.00, containing 15,000 vols.
County?
State?
Number of Residents doing business in Boston? More than half of the adult male population.
Communication with Boston? Steam and Street Railroads and Highways.
Steam Railroads? Boston & Albany.
Street " Metropolitan.
Number of passengers carried per year? About 1,250,000.
Industrial Pursuits? Tanning and Currying, Philosophical Instrument manufacturing, Farming Gardening and other ordinary occupations; 1 Savings Bank, been in operation a little over two years, has over 800 depositors and more than $75,000 on deposit.
Streets, how lighted? By Gas and Fluid.
Number of Lamps? 292 Gas, and about 50 Fluid.

	1868.	1869.	1870.	1871.	1872.
Amount Expended . .	$3,993 63	$5,216 86	$6,204 25	$8,000 04	$11,502 51

If Gas, Rate paid? $3.00 per 1,000 feet by City; $4.00 per 1,000 by Citizens.
Number of Paupers? 5.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? Reported	71	121	97	135	106

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a Massachusetts House of Representatives, Document No. 66, 1872. "Assets and Indebtedness of Cities and Towns." Brookline — Assets, $228,000. Liabilities, $275,800.

b Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable Property held for Religious or Charitable purposes in the several Cities and Towns." Brookline — Meeting-houses, $285,000.

TOWN DEBT OF BROOKLINE.

TO WHOM PAYABLE.	Date.	When Due.	Amount.	Int.
Boston Five Cents Savings Bank.	Dec. 27, 1864	Dec. 1, 1873	$10,000 00	6
Marshall Stearns	Sept. 19, 1865	Sept. 19, 1874	10,000 00	6
Commonwealth of Massachusetts.	Jan. 25, 1868	Oct. 15, 1875	14,000 00	6
" "	June 15, 1868	" 15, 1876	15,000 00	6
" "	" 15, 1868	" 15, 1877	15,000 00	6
" "	Dec. 9, 1869	" 15, 1878	16,000 00	7
" "	" 9, 1869	" 15, 1879	16,000 00	7
" "	" 9, 1869	" 15, 1880	16,000 00	7
" "	" 9, 1869	" 15, 1881	19,800 00	7
Salem Savings Bank	July 22, 1870	" 15, 1883	24,000 00	6 1-2
Nancy Stearns	Dec. 1, 1870	Dec. 1, 1882	1,000 00	6 1-2
Commonwealth of Massachusetts.	Dec. 20, 1870	Oct. 15, 1882	28,000 00	6 1-2
" "	" 20, 1870	" 15, 1834	30,000 00	6 1-2
New England Mut. Life Ins. Co.	Jan. 1, 1871	Jan. 1, 1891	100,000 00	6
" " " " "	July 1, 1871	July 1, 1896	50,000 00	6
" " " " "	Jan. 24, 1872	Jan. 1, 1886	20,000 00	6 1-2
" " " " "	" 24, 1872	" 1, 1886	30,000 00	6 1-2
" " " " "	July 1, 1872	July 1, 1892	50,000 00	6
Z. C. Howland & A. B. Shedd, Executors	July 1, 1871	July 1, 1896	40,000 00	6
New England Mut. Life Ins. Co.	May 24, 1872.	Jan. 1, 1885	35,000 00	6 1-2
" " " " "	June 29, 1872.	" 1, 1887	35,000 00	6 1-2
George W. Goldsmith	" 12, 1872.	June 12, 1873.	7,000 00	6
			$581,800 00	

To the above add $165,000 for increase up to Sept. 1st, 1873.
And subtract Sinking Fund $7,087 58.

STATISTICS RELATING TO THE TOWN OF BRIGHTON.

AREA — not including Streets?	2,370 acres.
" Upland?	1,970 "
" Marsh or Lowlands?	400 "
" reserved for Parks or Squares?	42.3 acres belonging to the City of Boston, and enclosed with Chestnut Hill Reservoir and Driveway. Total land belonging to the City of Boston, including Reservoir and Driveway, in Brighton, 130.3 acres.
" Improved?	
" Unimproved?	

Miles of Streets? 28.

Paved? Cambridge and Washington Streets. 1½ miles paved by the U. H. R. Road.

Macadamized? Main thoroughfares all were Macadamized; but we have between four and five miles of streets built in great part with stone foundations, on the plan of the Chestnut Hill Driveway.

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Streets and Bridges	$11,380 32	$9,377 08	$13,128 05	$23,028 46	. . . . . .
Do. laying out and widening Streets? .	. . . . . .	4,027 15	41,685 23	117,921 21	. . . . . .
Miles of Sewers? . . .	. . . . . .	. . . . . .	. . . . . .	2	. . . . . .
Amount expended on Sewers?	. . . . . .	. . . . . .	. . . . . .	$2,795 86	. . . . . .

But some portion of street expenditure is for drainage and sewers.

Line of Sewerage? Chestnut Hill Avenue to Washington; Washington west to Lake; and East to Cambridge. No proper outlet. Sewage carried off by brooks flowing into Charles River.

	1864.	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	$3,265,311 00	$4,467,499 00	$5,017,619 00	$5,778,077 00	$10,881,621 00	$14,548,531 00
Number of Polls? .	903	1,098	1,310	1,269	1,402	1,590
" " Dwellings?						
" Legal Voters?	. . . .	. . . .	. . . .	. . . .	. . . .	About 1,100

	1860.	1865.	1870.
Population?	3,375	3,859	4,970

	1866.	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation?	$49,104 73	$55,374 10	$78,822 00	$92,581,32	$122,501 83	$135,571 63
City or Town? . . .	33,549 00	44,100 00	61,025 00	75,000 00	102.700 00	114,150 00
County?	2,941 00	3,412 63	3,765 00	3,765 66	5,149 24	5.691 27
State?	11,400 00	7,400 00	9,250 00	9,250 00	8,880 00	9,990 00
Rate per Thousand? .	10 50	10 50	13 00	10 00	11 00	9 10

Debt of? $387,308.47, less $36,157.47 Cash in Treasury. $20,167.56 due for Cambridge Street Betterments, and, say $75,000.00 unassessed Betterments on Rockland, Winship, and Market Streets. For details see Town Report and Schedule accompanying this sheet. *a*

Rate of interest?

Water supply?

If Water Works, Capacity?

Cost?

Fire Department — Number of Engines, etc.? 2 Hand Engines, 1 Hose Carriage, 6 Ladders, 1,500 feet of Hose.

Expense, 1872? $1,320.50.

Fire Alarm?

Number of Police? 5.

Cost of Police Department for 1872? $5,092.22.

	High.	*Grammar.*	*Primary.*	*Intermed'te.*
Number of Public Schools, 1872? . .	1	2	6	6
" " Seats for Pupils, " . .	86	386	336	336

Each Grammar School is graded into four departments.

Average Attendance, 1872? 743.

Cost of Teaching, per Scholar? $23.16.

Number of Children from 5 to 15 years of age, in 1872? 998.

Estimated Value of Public School Property, " See Schedule after Statem't of Debt.

Total Value of Public Property, " " " " " "

Value of Property Exempted from Taxation, *b* " $446,000.

Public " " " " " $326,000. Including Chestnut Hill Reservoir and Driveway.

Private " " " " " $120,000. Churches.

Public Institutions? Almshouse, and about 14 acres of land; Holton Library, 10,000 vols.

City or Town?

County ?

State?

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a Massachusetts House of Representatives, Document, No. 66, 1872. "Assets and Indebtedness of Cities and Towns." Brighton — Assets, not given. Liabilities, $141,248.45.

b. Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable Property held for Religious or Charitable purposes in the several Towns and Cities."

Brighton — Meeting-houses	$59,100 00
Other Charitable Associations	7,000 00
Total	$66,000 00

Number of Residents doing business in Boston? No definite answer can be given. All business is done in or for Boston, except the day laborers, wharf-owners, and retail shopkeepers.

Communication with Boston? Railroads and Highways, through Brookline and Cambridge.

Steam Railroads? Boston and Albany, 3 Stations; Boston, Hartford, and Erie; Woonsocket Branch; Reservoir Station.

Street " Newton Railroad, operated by Union Railway Company.

Otherwise? No other public conveyance. Much of the business and travel is carried on in vehicles owned by parties doing the business.

Number of Passengers carried per year? Nearly 1,000,000.

Industrial Pursuits? Mainly Slaughtering and Gardening for Boston market; Lumber and Coal wharves; Market business and Retail traffic; Boston and Albany Car Shop. The trade in horses, beeves, sheep, and swine, by careful estimate, in a single year, amounts to the following sums: — Horses, $1,000,000; Beeves, $13,000,000; Sheep, $2,000,000; Swine, $250,000. There is one Savings Bank that has 750 depositors, and $188,000 on deposit; and two National Banks, whose capitals amount to $450,000.

Streets, how Lighted? By Gas furnished by Brookline Gas Company and Newton Gas Co.

Number of Lamps? 118.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	$800 18	$1,205 15	$1,838 44	$1,970 12	$2,912 01

These items include the lighting of the Town Hall.

If Gas, Rate paid? $3.00 per 1,000 by city, and $4.00 per 1,000 by citizens, for Brookline.

Number of Paupers? Only 1 resident pauper. Sundry persons aided from time to time.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	103	118	95	104	127

Town Debt, February 1, 1873.

Date.	Rates of Interest.	To whom payable.	Amount.	When due.
April 2, 1866.	6 per cent.	Mary A. Town	$6,000 00	April 2, 1876.
May 31, 1868.	6 "	Mary A. Town	4,500 00	May 31, 1873.
April 9, 1868.	6 "	Charles Smith	1,800 00	April 9, 1873.
Sept. 21, 1868.	6 "	Commonwealth of Massachusetts	10,000 00	Sept. 21, 1878.
Oct. 12, 1869.	7 "	Hugh Fagan	2,000 00	On demand.
Dec. 4, 1869.	7 "	Boston Five Cents Savings Bank	20,000 00	Dec. 4, 1874.
Feb. 23, 1870.	6½ "	Mary A. Town	2,000 00	On demand.
Oct. 12, 1870.	7 "	City Institution for Savings, Lowell	4,000 00	Oct. 12, 1880.
May 12, 1868.	6½ "	" " " " "	6,000 00	May 12, 1873.
June 10, 1871.	6½ "	Boston Five Cents Savings Bank	50,000 00	June 10, 1876.
June 12, 1871.	6½ "	Lucinda O. Adams	550 00	On demand.
July 28, 1871.	6½ "	Commonwealth of Massachusetts	38,000 00	July 28, 1876.
Oct. 9, 1871.	6½ "	Charles Smith	2,000 00	Oct. 9, 1874.
Nov. 6, 1871.	6½ "	Commonwealth of Massachusetts	40,000 00	Nov. 6, 1881.
Nov. 16, 1871.	6½ "	" " "	10,000 00	Nov. 16, 1881.
Dec. 20, 1871.	7 "	" " "	10,000 00	Dec. 20, 1874.
Dec. 20, 1871.	7 "	" " "	15,000 00	Dec. 20, 1874.
April 23, 1872.	6 "	David Coolidge	5,000 00	April 23, 1875.
June 4, 1872.	7 "	Sarah A. Matchett	5,000 00	June 4, 1873.

June 11, 1872.	6½	"	H. H. Brackett	1,400 00	On demand.
July 1, 1872.	7	"	Elizabeth L. Bennett	10,000 00	July 1, 1873.
Sept. 11, 1872.	6	"	Charles Currier	2,000 00	On demand.
Sept. 25, 1872.	7	"	Jos. Breck & Son	5,000 00	" "
Sept. 28, 1872.	7	"	Ebenezer B. Bogle	1,000 00	" "
Oct. 28, 1872.	7	"	Massachusetts Hospital Life Insurance Company	25,000 00	Oct. 23, 1875.
Oct. 28, 1872.	7	"	" " " " "	10,000 00	Oct. 28, 1875.
Oct. 31, 1872.	7	"	George Holden	10,000 00	Oct. 31 1875.
Jan. 1, 1873.	7	"	Boston Five Cents Savings Bank	25,000 00	April 1, 1874.
Jan. 1, 1873.	7	"	" " " " "	20,000 00	April 1, 1874.
Jan 31, 1873.	7	"	Lydia D. Goodenough	1,000 00	Jan. 31, 1875.
Jan. 29, 1873.	7	"	Horace W. Jordan	10,000 00	Mch. 29, 1873.
Jan. 31, 1873.	7	"	" " "	10,000 00	Mch. 31, 1873.
Jan. 31, 1873.	7	"	" " "	10,000 00	Mch. 31, 1873.
Jan. 31, 1873.	7	"	" " "	5,000 00	Mch. 31, 1873.
			National Bank of Brighton	7,000 00	
			Holton Charity Fund ($950)	1,530 17	
			Holton Charity Fund ($1,425)	1,425 00	
			Flavilla E. Woodworth, Legacy	103 30	
				$387,308 47	

Gross Debt, February 1, 1873		$387,308 47
Up to September 1: —		
Increase by Loan for Lincoln Street, say,	$16,000 00, completed.	
Add for Engine House and Engine	10,000 00	
Library Building	30,000 00, unexpended.	
New Grammar School and Land	50,000 00 "	
Sewer in Franklin and N. Harvard Streets	30,000 00, commenced.	
Bigelow School	4,000 00	
		140,000 00
		$527,308 47
Subject to reduction of		137,000 00
Due for Betterments assessed and uncollected, also to amount to be assessed for Betterments on Union Street and Lincoln Street		$390,308 47

Besides amount due for Betterments, the town owns the following property: —

School-houses	$55,000 00
Land	63,000 00
Public Library and Town Hall	12,000 00
Engine Houses	14,000 00
Cemeteries	15,000 00
Other Real Estate, exclusive of New Grammar School Lot	26,500 00
Fire Apparatus	2,000 00
Trust Funds	2,900 00
New Engine House	50,000 00
	$243,000 00

STATISTICS RELATING TO THE CITY OF CHARLESTOWN.

AREA — not including Streets? 23,447,220 feet.
" Upland? 14,812,687 feet.
" Marsh or Lowlands? 8,634,533 feet.
" reserved for Parks or Squares? About 2 1-2 acres; Monument grounds excepted, amounting to 3 81-100 acres.
" Improved? All fully.
" Unimproved?
Miles of Streets? 28.
Paved? 4.
Macadamized? 24.

	1868.	1869.	1870.	1871.	1872.
Amt. expended on repairs of Streets? *a* .	$35,933 37	$63,210 22	$78,330 73	$70,474,36	$62,330 22
Do. laying out and widening Streets? .	85,404 37	36,216 13	136,921 85	37,650 69	34,867 29
Miles of Sewers? . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	over 11 miles
Amt. exp'd on Sewers?	25,493 30	28,887 95	18,557 92	29,555 60	13,483 97

Line of Sewerage? Charles River, and Mystic River.

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City? *b*	$17,125,900	$18,196,900	$24,723.600	$27,969,100	$34,942,120
Number of Polls? . .	5,753	6,113	7,528	7,995	8,586
" of Buildings?	3,442	3,574	3,817	3,992	4,812
" Legal Voters?	5,372	5,408	5,467	5,433	6,110

	1860.	1865.	1870.
Population?	25,063	26,398	28,330

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	$332,491 44	$380,965 38	$463,495 60	$500,895 22	$555,280 64
City or Town? . . .	261,946 52	326,960 57	398,487 64	435,887 26	494,929 64
County?	14,692 72	17,044 71	18,807 96	18.807 96	22,151 00
State?	55,450 00	36,960 00	46,200 00	46,200 00	38,200 00
Rate per thousand? .	17 60	14 80	16 00	15 20	(*c*) 15 40

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a Charlestown is connected with neighboring Cities and Towns by five bridges, viz.: To Boston, 2; Chelsea, 1; Everett, 1; Cambridge, 1. The maintenance of these cost the City last year, $55,258.46.

b Charlestown's valuation and tax not yet made up for this year at date.

c Massachusetts House of Representatives, Document No. 63, 1872. "Assets and Liabilities of Cities and Towns." Charlestown — Assets, $3,107,225.77. Liabilities, $2,313,818.10.

Debt of? See Table. *a*
" when due? "
Rate of Interest? 5 5-6.
Water Supply? Mystic Lake.
If Water Works, Capacity? 20 millions gallons per day.
" " Cost? $1,461,259.41 to January 1st, 1873. Construction Account closed, nothing charged to it since that time.
Fire Department — Number of Engines, etc.? 2 Steamers.
7 Horse, and 2 Hand Hose Carriages.
1 Hook-and-Ladder Truck. 12,000 feet of Hose. 125 Lowry Hydrants. 36 Single Hydrants. 38 Reservoirs.
Expense, 1872? $39,439.34.
Fire Alarm? Gamewell & Co.'s patent. Very satisfactory. 22 boxes. 7 miles wire.
Number of Police? 35.
Cost of Police Department for 1872? $43,863 36.
Number of Arests, 1872? 1,577.

	High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872?	1	5	41
" " Seats for Pupils, "	297	3,360	2,352
Average Attendance?	242	2,621	1,749

Cost of Teaching, per Scholar, 1872? $20.65.
Number of Children from 5 to 15 years of age, in 1872? 6,810.
Estimated Value of Public School Property " $578,400 00.
Total Value of Public Property " $3,027,400.00 (including Water Works, $2,000,000.00).
Value of Property Exempted from Taxation in 1872? Has been no late estimate. Extraordinary because of the Navy Yard, also the State Prison, but this is to be removed. Area of Navy Yard, 83 1-2 acres, worth from $1.75 to $2.00 per foot, including buildings. Area of State Prison, 412,388 square feet of upland, 101,580 square feet of marsh; total, 513,968; worth, including buildings, from $1.25 to $1.50 per foot. The Monument grounds, 3 81-100 acres, are estimated at from $1.75 to $2.00 per foot. There are 13 Churches and 3 Cemeteries. *b*
Public Property Exempted from Taxation, in 1872?
Private " " " " "
Public Institutions? As above.
City or Town? Town Hall. Public Library. Public Baths.
County?
State? State Prison. U. S. Navy Yard.
Number of Residents doing business in Boston? A large majority of the business men.
Communication with Boston? By Bridges.

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a Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable Property held for Religious or Charitable purposes in the several Towns and Cities."

Charlestown — Meeting-houses	$608,400 00
Educational Institutions, other than Public Schools	5,100 00
Other Charitable Associations	26,000 00
Total	$639,500 00

Steam Railroads? Fitchburg, Boston & Maine, and Eastern.
Street “ Middlesex, and Boston & Lynn.
Otherwise? Citizens' Omnibus Line.
Number of passengers carried per year? More than 6,500,000.
Industrial Pursuits? Locomotive and Steam Engine and Boiler Manufactories. Brass Foundries. Sugar Refineries. Sheet Lead and Lead Pipe Manufactories and other ordinary occupations. There are two Savings Banks, having 19,000 depositors, and $6,000,000.00 on deposit; and two National Banks whose joint capital is $650,000.00, and a surplus of $200,000.
Streets, how lighted? By Gas and Fluid.
Number of Lamps? In 1868, Gas, 319. 1869, Gas, 338. 1870, Gas, 374. 1871, Gas, 411. 1872, Gas, 436, and Fluid, 55.

Amount Expended? .	1868.	1869.	1870.	1871.	1872.
Approximate?	$15,600 00	$18,100 00	$20,000 00	$20,900 00	$21,600 00

If Gas, Rate paid? 1868, $3.00. 1869, $3.00. 1870, $2.90. 1871, $2,90. 1872, 7 mo's $2.90, 5 mo's $2,75 per 1,000 feet.

	1868.	1869.	1870.	1871.	1872.
Number of Paupers? .	43	46	56	57	54
Number of Deaths? .	672	692	642	674	817

Funded Municipal and Water Debt and Temporary Loans.

To whom due.	Date.	Time.	Rate of Interest.	Amount.	
Trustees of Schools,	May 1, 1837	Permanent,	6 per cent,	$600 00	
" " "	May 22, 1848	"	6 "	5,000 00	
Warren Inst. for Savings,	Sept. 1, 1857	20 years,	6 "	25,000 00	
Pierce Fuel Fund,	Sept. 20, 1860	Permanent,	6 "	1,500 00	
N. E. Mutual Life Ins. Co.	Jan. 1, 1868	3 yrs., renewed to Ap. 1, '72,	7 per cent.	50,000 00	
D. B. Weston, guardian,	Feb. 26, 1868	Demand,	6 "	900 00	
Trustees of Poor's Fund,	April 1, 1868	Permanent,	7 "	17,187 50	
Trust. Charles'n Pub. Lib.	Jan. 26, 1872	Demand,	7 "	1,000 00	
Mrs. Mary A. Sewell,	July 8, 1872	"	7 "	19,000 00	
James W. Roberts & Co.	July 11, 1872	"	7 "	15,000 00	
Water Sink'g Fund Com.,	Sept. 1, 1872	"	7 "	19,268 46	
Willard Rice,	Sept. 30, 1872	"	7 "	3,000 00	
Char. Asso. Ch. Fire Dep't,	Dec. 6, 1872	2 years,	7 "	691 50	
Solomon G. Phipps,	Dec. 7, 1872	Demand,	7 "	1,900 00	
" "	" " "	"	7 "	5,000 00	
Mun. Sink'g Fund Com.,	Dec. 26, 1872	2 years,	7 "	3,982 82	
Monument Nat'l Bank,	Jan. 4, 1873	2 months,	6 "	10,000 00	
" " "	Jan. 7, 1873	3 "	6 "	5,000 00	
Bunker Hill " "	" " "	3 "	6 "	35,000 00	
					$219,030 28
City Loan Bonds,	Oct. 1, 1862	15 years,	5 "	110,000 00	
" "	Oct. 1, 1862	20 "	5 "	20,000 00	
" "	Oct. 1, 1863	20 "	5 "	38,000 00	
" "	Oct. 1, 1866	10 "	5 "	1,000 00	
" "	April 1, 1868	20 "	6 "	100,000 00	
" "	Jan. 1, 1869	20 "	6 "	95,500 00	
" "	July 1, 1869	20 "	6 "	78,500 00	
" "	Jan. 1, 1870	20 "	6 "	136,000 00	
" "	July 1, 1870	20 "	6 "	90,000 00	
" "	Jan. 1, 1871	20 "	6 "	150,000 00	
" "	July 1, 1871	20 "	6 "	170,000 00	
" "	Jan. 1, 1872	20 "	6 "	130,000 00	
					1,119,000 00
Water Loan Bonds,	Oct. 1, 1862	20 years,	5 "	100,000 00	
" "	Oct. 1, 1863	20 "	5 "	202,000 00	
" "	Oct. 1, 1863	30 "	5 "	6,000 00	
" "	April 1, 1864	30 "	5 "	102,000 00	
" "	Oct. 1, 1864	10 "	6 "	116,000 00	
" "	April 1, 1865	20 "	6 "	1,000 00	
" "	" " "	10 "	6 "	7,000 00	
" "	Oct. 1, 1865	10 "	6 "	60,000 00	
" "	April 1, 1866	20 "	6 "	35,000 00	
" "	" " "	10 "	6 "	130,000 00	
" "	Oct. 1, 1866	20 "	6 "	60,000 00	
" "	" " "	15 "	6 "	26,000 00	
" "	" " "	10 "	6 "	56,000 00	
" "	April 1, 1867	10 "	6 "	11,000 00	
" "	Oct. 1, 1867	20 "	6 "	50,000 00	
" "	April 1, 1868	20 "	6 "	3,000 00	
" "	July 1, 1870	20 "	6 "	100,000 00	
" "	Jan. 1, 1871	20 "	6 "	51,000 00	
" "	July 1, 1871	20 "	6 "	139,000 00	
" "	Jan. 1, 1872	20 "	6 "	67,000 00	
" "	July 1, 1872	20 "	6 "	42,000 00	
					$1,364,000 00
					$2,702,030 28

Consolidated Indebtedness of the City March 1, 1873.

Water Debt Funded	$1,364,000 00
“ “ Unfunded,	40,259 41
Municipal Debt Funded,	1,168,287 50
“ “ “Temporary Loans,”	169,742 78
Amount due Water Sinking Fund Committee,	22,616 53
“ “ Municipal “ “ “	665 68
County of Middesex — amount due for tax of 1872,	22,151 00
Accounts audited and unpaid,	62,574 19
	$2,850,297 09

Statement of the City's Net Indebtedness (Exclusive of Water Debt), for the Financial Year ending Feb. 28, 1873.

Municipal Debt Funded March 1, 1873		$1,168,287 50
“ “ Unfunded “ “		169,742 78
County of Middlesex — amount due for tax of 1872,		22,151 00
Accounts audited and unpaid March 1, 1872,		62,574 19
Amount due Municipal Sinking Fund Committee March 1, 1873,		665 68
“ “ Water “ “ “ “ “		22,616 53
		$1,446,037 68
To meet this, there was cash on hand March 1, 1873,	$58,266 60	
Amount due on account of “Notes Receivable,”	13,741 38	
Due from State on “State Aid Account,”	15,759 72	
Uncollected taxes for the years 1869, 1870, 1871, 1872,	83,567 92	
Betterment assessments uncollected,	10,058 60	
Sewer “ “	10,127 22	
Sidewalks “ “	6,053 45	
Due from Water Works, amount expended on Construction Account in excess of Water Bonds issued,	40,259 41	
		237,834 30
		$1,208,203 38
Less amount of Sinking Fund, March 1, 1873,		35,455 39
Net Debt,		$1,172,747 99

STATISTICS RELATING TO THE CITY OF BOSTON.

AREA — not including Streets? 9,583 acres.

" Improved?

" Unimproved or vacant? 239,999,251 square feet. This amount does not include the islands in the Harbor, the principal of which are Breed's, Deer, Long and Thompson's, containing about 304, 134, 216, and 140 acres respectively, exclusive of marsh lands. In addition to the above the Commonwealth holds the fee of 334,393 square feet of land in Ward 6, and 523,230 square feet in Ward 9, upon which no valuation is placed, as no taxes can be assessed.

" Marsh or Lowlands? 87,471,623 square feet.

" reserved for Parks or Squares? Common, 48 1-4 acres exclusive of Cemetery, 1 1-4 acres. Public Garden, about 24 1-4 acres. Franklin square, 105,205 square feet. Blackstone Square, 105,000 square feet. Chester Square, 57,860 square feet. Commonwealth Avenue, enclosure from Arlington to Dartmouth Street, 163,800 square feet. Union Park, 16,000 square feet. Worcester Square, 16,000 square feet. Lowell Square, 5,772 square feet. South Boston, Telegraph Hill, on which the Reservoir stands, 190,000 square feet. Independence Square, about 6 1-2 acres. Lincoln Square, 9,510 square feet. East Boston: Maverick Square, 22,500 square feet. Central Square, 49,470 square feet. Belmont square, 11,628 square feet. Boston Highlands: Madison Square, 122,220 square feet. Orchard Park, 93,542 square feet. Washington Park, 396,125 square feet. Longwood Park, 21,140 square feet. Walnut Park, 5,736 square feet. Lewis Park, 5,600 square feet. Fountain Square, 103,000 square feet. Cedar Square, 30,794 square feet. Dorchester: Meeting-house Hill Square, 57,512 square feet. Fort Hill, about 40,000 square feet.

Miles of Street? About 224.

Paved? 4 in East Boston; 7 in South Boston, and 44 in City proper.

Macadamized?

	1868.	1869.	1870.	1871.	1872.
Amount expended on Streets and Bridges?	$502,000 00	$1,174,000 00	$1,400,000 00	$1,308,000 00	$1,536,000 00
Do. laying out and widening Streets? .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Miles of Sewers? . . .	103	105 1-2	112	117	123
Am't exp'd on Sewers?	$45,159 00	$183,120 00	$150,716 00	$159,993 00	$164,345 00

Line of Sewerage? Charles River and Harbor.

	1864.	1866.	1868.	1870.	1872.	1873.
Valuation of Town or City?	$332,449,900	$415,362,345	$493,573.900	$584,089,400	$682,724,300	$693,831.400
Number of Polls? . .	32,832	34,192	48,416	56,926	67,221	70,199
" " Buildings?	. . . .	. . . .	. . . .	. . . .	. . . .	35,190
" Legal Voters?	. . . .	. . . .	. . . .	. . . .	. . . .	46,000

	1860.	1865.	1870.
Population?	177,840	192,318	250,256

	1866.	1868.	1870.	1871.	1872.	1873.
Total amount raised by Taxation?	$5,274,484 00	$5,884,829 00	$8,636,862 00	$7,790,454 00	$8,122,316 31	$8,638,092 00
City and County? .	4,257,994 00	5,161,689 00	7,703,087 00	6,856,669 00	7,230.050 33	7,809,552 00
State?	1,016,490 00	723,140 00	933,775 00	933,785 00	757,823 97	828,540 00
Rate per Thousand .	13 00	12 30	15 30	13 10	11 70	12 80

Debt of? Bonds issued, $28,247,177.91. Notes issued, $381,357.91. Trust Funds, $585,765.09 Total, $29.214,300.91. [Taken from return of Assessors returned under the provisions of Chapter 76 of the Acts of 1870.] *a*

Debt, when due?

Rate of Interest? Average, 5.58 per cent.

Water Supply? Lake Cochituate.

If Water Works, Capacity? When the Lake is full 2,011,165,000 gallons. Minimum, 12,000,000 gallons per day.

Cost? To May 1, 1873. Net $9,860,956.24.

Fire Department — Number of Engines, etc.? 21 Engines.
10 Hose Carriages.
7 Hook and Ladders.
3 Extinguishers.
475 Men.

Expense, 1872? $438,494.10.

Fire Alarm? Thorough and extensive system. Expense, 1872? $40,507.00.

Number of Police? 550.

Cost of Police Department for 1872? $619,622.93.

Number of Arrests in " 27,902.

	High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872?	5	37	335
" " Seats for Pupils, "	2,350	23,842	18,700
Average Attendance, "	1,581	18,000	13,099

Cost of Teaching, per Scholar, 1872? In whole City, $33.04.

Number of Children from 5 to 15 years of age, in 1872? 46,144.

Estimated Value of Public School Property " $6,655,300.00.

Total Value of Public Property, in 1872? Public Library, $630,000. Other public buildings, except Faneuil Hall, $5,136,500. Salable Land, $2,154,500. Public Grounds and Parks, $223,100. Cemeteries, $1,754,400. Other Real Estate, $1,854,500. Water Works, $7,060,659. Fire Apparatus, $269,992. Trust Funds, $585.765.09. Other Assets, $12,849,159,31. Aggregate Assets, $37,019,275.40.

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a Massachusetts House of Representatives, Document No. 66. "Assets and Indebtedness of Cities and Towns." Boston — Assets, $13,544,077.91. Liabilities, $26,666,436.73.

Value of Property Exempt from Taxation in 1872? See in addition to the above, "Public Institutions," and the Schedule of Assets appended. *a*

Public " " " " "

Private " " " " "

Public Institutions? State House, Court House and Jail.

City or Town? Deer Island: — House of Industry, also House of Reformation for Girls; a brick School-house for pauper boys and a wooden one for girls; a farm-house, brick workshop, and receiving-house, two large barns and other buildings required. Galop's Island: — Quarantine Station, and Small-pox Hospital, and other buildings. House of Correction, and Lunatic Hospital, Chapel, Workshops, etc.

County?

State?

Number of Residents doing business in Boston?

Communication with Boston?

Steam Railroads?

Street "

Otherwise?

Number of passengers carried per year?

Industrial Pursuits?

Streets, how Lighted? Gas and fluid.

	1868.	1869.	1870.	1871.	1872.
No. of Lamps? Gas.	4,414	5,040	5,405	5,888	6,339
Amount Expended? .	$272,982 88	$276,064 71	$324,580 47	$337,129 07	$359,085 99

If Gas, Rate paid?	1868.	1869.	1870.	1871.	1872.
City Proper	$3 12 1-2	$3 12 1-2	$2 50	$2 50	$2 08 1-3
East Boston	3 37 1-2	3 37 1-2	2 75	2 75	2 50
South Boston	3 37 1-2	3 37 1-2	2 75	2 75	2 50
Roxbury	3 37 1-2	3 37 1-2	2 75	2 75	2 50
Dorchester	no lamps.	no lamps.	3 00	3 00	2 75

[The fluid lamps are growing rapidly less, having decreased fifty per cent. since 1867. The rate paid for fluid is 1-10 of 1 cent per hour, per lamp.]

Number of Paupers? 272. 1,194 families, consisting of 3,584 persons, were assisted by the Overseers of the Poor last year.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	5,519	5,523	6,098	5,888	9,900

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a Massachusetts House of Representatives, Document No. 65, 1872. "The amount of Non-Taxable property held for Religious or Charitable purposes in the several Towns and Cities."

Boston — Meeting-houses	$6,688,400 00
Educational Institutions other than Public Schools	1,076,500 00
Other Charitable Associations	2,964,200 00
Total	$10,729,100 00

Consolidated Debt of the City of Boston.

ON THE 30TH OF APRIL, 1873.

The Amount of the Consolidated Debt of the City (*funded, unfunded, and Water Loans*) on the 30th of April, 1873, was $31,841,156.44, and is made up of the following items, viz.: —

Funded City Debt, as per statement on page 229	$22,854,855 69
Unfunded City Debt, as per statement on page 229	1,208,039 64
Water Loans, as per statement on page 240	6,912,711 11
Roxbury Debt, as per statement on page 226	618,050 00
Dorchester Debt, as per statement on page 227	167,500 00
	$31,841,156 44

Funded	$30,553,116 80
Unfunded	1,228,039 64
	$31,841,156 44

The classification of the Consolidated Debt of the City, *funded and unfunded*, April 30, 1873, is as follows: —

City Debt, proper	$19,280,150 20
Water Debt. — The net cost of the works to April 30, 1873, as stated on page 248	9,860,956 24
War Loans, outstanding	1,914,500 00
Roxbury Debt, outstanding	618,050 00
Dorchester Debt, outstanding	167,500 00
	$31,841,156 44

ASSETS AND LIABILITIES.

ACTS OF 1870, CHAP. 76.

ASSETS.

School-houses. — An estimated value of the land, buildings and funriture, for list of which see Auditor's Report, pages 306 to 309 inclusive, ... $6,756,200 00

Public Library. — An estimated value of the land and buildings, . . . $681,000 00

Other Public Buildings. — From the list of buildings on page 302 of the above-mentioned report, we have omitted "Faneuil Hall," as we are instructed by the City Solicitor that the City of Boston is restrained by law from selling or leasing the same. It is consequently of no pecuniary advantage to the city.

For a list of the buildings under charge of Board of Directors of Public Institutions, see page 301; for those under the supervision of the Committee on Public Buildings and the Superintendent of Public Buildings, see page 302, ... $5,994,700 00

Public Grounds and Parks. — Under this head we return Lowell and Washington squares as the only property which the city has a right to sell, as, with the exception of the Common and Public Garden, in the opinion of the City Solicitor, all other property of this class is appurtenant to the estates bordering on the several reservations; the conditions in the deeds of said estates, requiring that the several Squares and Parks shall be kept open forever. As the City of Boston is restrained by law from selling or leasing the Common and Public Garden, and estopped from any sale or profitable use of other Public Grounds, they are, with exception of those above mentioned, of no pecuniary advantage to the City of Boston.

We return Washington and Lowell squares, ... $223,100.00

Cemeteries.—It is impossible to estimate the value of our Cemeteries, as all the older burial grounds, situated where land is most valuable, are so encumbered by tombs, which are private property, that a satisfactory estimate of the value of the real estate cannot be determined; as an approximate estimate they may be put at $1,770,450.00

Other Real Estate, consisting of salable land in charge of the Committee of Public Lands, reserved lots, also land and houses in charge of the Joint Standing Committee on Streets, wharf property and islands in the harbor, for list see pages 296–297 and 298, . $2,030,600 00

Water Works. — Referring to the reasoning and consequent conclusions of our estimation for the year 1872, which placed the value of the Water Works at $7,060,659, we would say that since that date there has been added to the cost of the works by construction and new material (exclusive of current expenses) $282,278, which amount added to the valuation May 1, 1872, would place the present value at $7,342,937, on which amount it is returned,

$7,342,937 00

Fire Apparatus. — The apparatus used in the City of Boston for the extinguishment of fires is as follows, viz.: Steam Fire Engines with their appliances, Hose Carriages, Hook and Ladder Carriages, Extinguisher Wagons, Coal Wagons, spare apparatus, an estimated value of the same being $335,878 00

Trust Funds. — By reference to the Auditor's Report it will be found that the City of Boston holds Trust Funds to the amount of $673,604.07. But as these funds cannot be sold or used for the general purposes of the city, and as the City of Boston is not the beneficiary of any of these funds, their aggregate amount is *stated but not returned as an asset* of the municipality, ... $673,604 07

The Sinking and Consolidated Street Improvement Funds. — For a statement of which see page 13 — *marked AA*, ... $13,926,777 92

RECAPITULATION OF ASSETS.

ACTUAL.

The Sinking and Consolidated Street Improvement	$13,926,777 92
The salable land, less Islands	1,500,000 00
Land in charge of Committee on Streets	476,100 00
	$15,902,877 92

NOMINAL.

School-houses, including furniture	$6,756,200 00
Public Library	681,000 00
Other public buildings	5,994,700 00
Public Grounds and Parks	223,100 00
Cemeteries	1,770,450 00
Islands	54,500 00
Water Works	7,342,937 00
Fire apparatus	335,878 00
	$23,158,765 00
Total Actual Assets	$15,902,877 92
" Nominal "	23,158,765 00
Grand total	$39,061,642 92
Trust Funds not included in above	$673,604 07

DETAILED STATEMENT OF DEBTS.

Reference being made to the Report of the Auditor, herewith transmitted, we return in accordance with the requirements the *total indebtedness* of the City of Boston, May 1, 1873, to be as follows: —

The debts of Roxbury and Dorchester, the Unfunded Debt of the City of Boston and *Bonds* issued for various purposes, for detail of which see pages 228 and 229, exclusive, of Water Loan — *marked A*, ... $24,928,445 33

For a Recapitulation of the objects for which such indebtedness was incurred and funded, see pages 238 and 239 — *marked B*, ... $22,854,855 69

Bonds issued on account of *Water Works*, for detail of which see pages 240 and 241 — *marked C*, ... $6,912,711 11

Debt of the City of Roxbury remaining unpaid, assumed by the City of Boston by the Act of Annexation, for detail of which see page 226 — *marked D*, . $618,050 00

Debt of the Town of Dorchester remaining unpaid, assumed by the City of Boston by the Act of Annexation, for detail of which see page 227 — *marked E*, $167,500 00

The Unfunded Debt of the City of Boston, for detail of which see page 229 — *marked F*, ... $1,288,039 64

$31,841,156 44

The Consolidated Debt of the City of Boston is shown by the statement of the Auditor, for which see page 244 — *marked G*, ... $31,841,156 44

And classification of the debt, by statement, on the same page — *marked H.*

STATISTICS RELATING TO THE TOWN OF MEDFORD.

Area — not including Streets?	4,920 acres.
" Upland?	4,400 "
" Marsh or Lowlands?	520 "
" reserved for Parks or Squares?	7 "
" Improved?	7 "
" Unimproved?	
Miles of Streets?	36 miles.
Paved?	
Macadamized?	12 miles.

	1868.	1869.	1870,	1871.	1872.
Amt. expended on repairs of Streets? . .	$4,832 70	$15,978 65	$9,702 85	$8,129 92	$9,128 69
Do. laying out and widening Streets? .	4,127 31	. . . . . .	6,921 21	8,644 55	30,348 87
Miles of Sewers? . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1½
Amt. exp'd on Sewers?	1,305 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .

Line of Sewerage?

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	$5,121,680 00	$5,017,444 00	$5,045,023 00	$5,972,504 00	$7,320,092 00
Number of Polls? . .	1,256	1,258	1,349	1,480	1,638
" of Buildings?	782	793	816	902	1,023
" of Leg'l Vot'rs?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,358

	1860.	1865.	1870.
Population?	4,842	4,860	5,850

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	$62,725 35	$64,853 34	$94,186 16	$89,601 27	$104,293 28
City or Town?	42,573 29	49,335 75	65,506 92	80,922 03	91,401 54
County?	4,222 06	4,897 59	5,404 24	5,404 24	4,731 74
State?	15,930 00	10,620 00	13,275 00	13,275 00	8,160 00
Rate per Thousand? .	12 00	12 30	13 60	15 20	13 80

Debt of? (See Table.)
" when due? " " "
Rate of Interest? " " "
Water Supply? From Spot Pond.

If Water Works, Capacity?
do. Cost? $250,000.
Fire Department — Number of Engines, etc.? 2 Hose Carriages. 1 Hook & Ladder Carriage. 1 Steam Fire Engine.
Expense, 1872? $3,547 62.
Fire Alarm?
Number of Police? 10.
Cost of Police Department for 1872? $2,929.00.

	High.	*Grammar.*	*Primary.*	*Intermed'e.*
Number of Public Schools, 1872? 20 .	1	4	7	8
“ “ Seats for Pupils, “ .	90	320	350	400
Average Attendance “ .	80	258	256	273

Cost of Teaching, per Scholar, 1872? Average of $17.62.
Number of Children from 5 to 15 years of age in 1872? 1,080.
Estimated value of Public School Property “ $94,000.
Total Value of Public Property “ $165,355.
Value of Property Exempt from Taxation “
Public “ “ “ “ “
Private “ “ “ “ “
Public Institutions, Tufts College and Town Library?
City or Town?
County?
State?
Number of Residents doing business in Boston?
Communication with Boston? Steam and Horse Railroads and Highway.
Steam Railroads? Boston & Maine and Lowell.
Street “ One.
Otherwise?
Number of Passengers carried per year? 876,400.
Industrial Pursuits? Brick, Button, Carriage Manufacturing, Ship Building, Print Works, Distilling.
Streets, how lighted? Gas and Oil.
Number of Lamps? 177; 94 Oil, and 83 Gas.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	$1,360 76	$2,082 06	$2.302 34	$2,357 88	$2,501 49

If Gas, Rate paid? $4.50 per 1,000 feet.
Number of Paupers? Twelve.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	80	97	90	111	108

P. R. LITCHFIELD, *Town Clerk.*

MEDFORD, May 8th, 1873.

TOWN DEBT OF MEDFORD.

Date.	To whom payable.	Due.	Rate.	Amount.
	Trustees Secomb Fund.	Perpetual.	6 per cent.	$5,500 00
	“ Hall Church Fund.	“	6 “	5,000 00
	“ Pamelia Simons Fund.	“	6 “	1,300 00
Dec. 26, 1867	Lowell Institution for Savings.	Dec. 26, 1887	6 “	18,000 00
May 13, 1870	“ Five Cent Savings Bank.	May 13, 1880	6½ “	10,000 00
June 15, 1870	“ “ “ “ “	June 15, 1883	6½ “	10,000 00
June 15, 1870	City Inst. for Savings, Lowell.	June 15, 1889	6½ “ } 15 yrs. 6 “ } 4 yrs.	10,000 00
Nov. 17, 1872	Lowell Institution for Savings.	Nov. 17, 1882	7 per cent.	11,000 00
Dec. 9, 1872	Howard National Bank, Boston.	April 9, 1873		18,000 00
July 1, 1870	Medford Water Fund Bonds. Amount issued to Feb. 1, 1873.	July 1, 1890	6 “	237,000 00
				$325,800 00

STATISTICS RELATING TO THE TOWN OF WINTHROP.

AREA — not including Streets? 882 acres.
" Upland? 697 "
" Marsh or Lowlands? 185 "
" reserved for Parks or Squares?
" Improved?
" Unimproved?
Miles of Streets? About 10 miles.
Paved?
Macadamized?

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Streets? . .	$369 00	$600 00	$999 98	$944 75	1,810 10
Do. laying out and widening Streets? .	. . . . . .	1,500 00	3,159 85	5,491 12	1,971 00
Miles of Sewers? . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Amount expended on Sewers?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

Line of Sewerage? None.

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	$362,331 00	$380,000 00	$386,000 00	$613,000 00	$678,000 00
Number of Polls? . .	136	132	. . . . . .	133	148
" " Buildings?	130	135	138	140	152
" Legal Voters?	92	98	104	110	115

	1860.	1865.	1870.
Population?	544	633	532

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	$8,957 00	$6,000 00	$6,189 00	$5,789 00	$8,020 00
City or Town?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
County?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
State?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Rate per Thousand? .	22 00	14 00	12 00	9 00	11 50
Debt of?	16,610 00	15,000 00	19,000 00	28,000 00	35,645 00

Debt, when due? Mostly on call.
Rate of interest? Average 7 per cent.
Water supply? From wells.

If Water Works, Capacity?
Cost?
Fire Department — Number of Engines, etc.?
Expense, 1872?
Fire Alarm?

Number of Police?
Cost of Police Department for 1872?

	High.	*Grammar.*	*Primary.*	*Intermediate*
Number of Public Schools 1872? . .	. . . . . .	1	2	1
" " Seats for Pupils, " . . .	. . . . . .	32	68	60
Average Attendance, " . . .	. . . . .	25	26	41

Cost of Teaching, per Scholar, 1872? 142 attended, at a cost of $10.80 each.
Number of Children from 5 to 15 years of age, in 1872? 107.
Estimated Value of Public School Property "
Total Value of Public Property " $10,500.
Value of Property Exempt from Taxation "
Public " " " " "
Private " " " " "
Public Institutions?
City or Town?
County?
State?
Number of Residents doing business in Boston? 12
Communication with Boston? Coaches.
Steam Railroads?
Street " One, not in operation.
Otherwise?
Number of passengers carried per year?
Industrial Pursuits? Farming.
Streets, how Lighted?
Number of Lamps?

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

If Gas, Rate paid?
Number of Paupers? One, partly supported by the Town.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	4	3	6	3	2

The above details are nearly exact.

WARREN BELCHER, *Town Clerk.*

STATISTICS RELATING TO THE TOWN OF EVERETT.

AREA — not including Streets? 2,100 acres.
" Upland? 1,450.
" Marsh or Lowlands? 650 acres.
" reserved for Parks or Squares?
" Improved?
" Unimproved?
Miles of Street? 17.
Paved?
Macadamized?

	1868.	1869.	1870.	1871.	1872.
Amount expended on repairs of Streets?	......	......	$4,600 00	$6,800 00	$7,100 00
Do. laying out and widening Streets?	......	......	......	1,300 00	650 00
Miles of Sewers?	......	......	......	......	......
Am't exp'd on Sewers?	......	......	......	......	......

Line of Sewerage?

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	......	......	......	$1,736,379 00	$3,091,924 00
Number of Polls?	......	......	......	584	724
Number of Buildings, Dwellings?	......	......	......	414	544
Do. Legal Voters?	......	......	......	400	525

	1860.	1865.	1870.
Population?	......	......	2,220

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	......	......	$24,845 00	$31,040 00	$37,330 00
City or Town?	......	......	21,010 00	27,204 00	32,780 00
County?	......	......	1,109 00	1,110 00	1,670 00
State?	......	......	2,726 00	2,726 00	2,880 00
Rate per Thousand?	......	......	13 30	12 00	11 80

Debt of? 1870, $35,033.00; 1871, $15,451; 1872, $24,710, not including Water Debt.
Debt, when due? 1874.
Rate of Interest? 6 and 7 per cent.
Water Supply? Mystic.

If Water Works, Capacity?
Cost? $84,000. Twenty years bonds 6 per cent.
Fire Department — Number of Engines, etc? Department now consists of one Hand Engine. One Hose Carriage.
Expense, 1872? $500.
Fire Alarm?
Number of Police?
Cost of Police Department for 1872? $500. Have had a portion of the year an Evening Officer, which is the extent of Police Force.

	High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872?	1	5	5
" " Seats for Pupils, "	34	275	253
Average Attendance, "	25	193	180

Cost of Teaching, per Scholar? In 1870, $20.00; in 1871, $18.50; in 1872, $21.00.
Number of Children from 5 to 15 years of age, in 1872? 541.
Estimated Value of Public School Property, " $22,200.
Total Value of Public Property, " $35,565.
Value of Property Exempted from Taxation, "
Public " " " " "
Private " " " " "
Public Institutions?
City or Town?
County ?
State?
Number of Residents doing business in Boston? 800.
Communication with Boston? Steam and Horse Railroads, and Highways.
Steam Railroads? Eastern.
Street " Malden & Melrose.
Otherwise?
Number of Passengers carried per year.
Industrial Pursuits? Varied.
Streets, how Lighted? Gas and Oil.
Number of Lamps? 24.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	. . . . . .	. . . . . .	$307 00	$351 00	$467 00

If Gas, Rate paid? $4.50.
Number of Paupers? 1.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	. . . . . .	. . . . . .	28	28	250

STATISTICS RELATING TO THE TOWN OF MALDEN.

AREA — including Streets, and Rivers?	3,062 acres.
" Upland?	1,200 "
" Marsh or Lowlands?	300 "
" reserved for Parks or Squares?	2 small parks.
" Improved?	
" Unimproved?	

Miles of Streets? 25.

Paved?

Macadamized?

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Streets? . .	. . . . . .	. . . . . .	. . . . . .	$5,245 53	$9,466 01
Do. laying out and widening Streets? .	. . . . . .	. . . . . .	. . . . . .	7,197 87	23,072 25
Sidewalks?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	5,487 85
Miles of Sewers? . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Am't exp'd on Sewers?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

Line of Sewerage?

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	. . . . . .	. . . . . .	. . . . . .	$4,999,272 00	$7,792,877 00
Number of Polls? . .	. . . . . .	. . . . . .	. . . . . .	1,945	2,122
" of Buildings?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,362
" Legal Voters?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,400

	1860.	1865.	1870.
Population?	5,847	6,840	7,367 *a*

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
City or Town? . . .	. . . . . .	. . . . . .	. . . . . .	$89,783 00	$107,061 00
County?	. . . . . .	. . . . . .	. . . . . .	3,225 00	5,033 00
State?	. . . . . .	. . . . . .	. . . . . .	7,923 00	8,680 00
Rate per thousand? .	. . . . . .	. . . . . .	$16 80	13 80	14 80

Debt of? Including Water Works, $367,695 80.

" when due? Various times.

Rate of Interest? 6 per cent.

a Everett set off from Malden, with a population of 2,220, March 9th, 1870.

Water Supply? Spot Pond for Malden, Medford, and Melrose.
If Water Works, Capacity? 2,000,000 gallons per day.
do. do. Cost? $248,090 14.
Fire Department — Number of Engines, etc.? 1 Steamer. 1 Hand Engine. Hook and Ladder. 3 Hose Carriages.
Fire Alarm?
Expense, 1872? $8,960 61.

Number of Police?
Cost of Police Department for 1872? $3,725 00.

	High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872? 7	1	4	2
" " Seats for Pupils, "	. . . . . .	. . . . . .	. . . . .
Average Attendance, "	79	800	250

Cost of Teaching, per Scholar? $25.00.
Number of Children from 5 to 15 years of age, in 1872? 1,600.
Estimated Value of Public School Property " $107,000.
" Total Value of Public Property " $282,889.
Value of Property Exempted from Taxation "
Public " " " " "
Private " " " " "
Public Institutions?
City or Town? Town Hall.
County?
State?
Number of Residents doing business in Boston? A large proportion.
Communication with Boston? Steam and Horse Railroad and Highway.
Steam Railroads? Boston and Maine.
Street Railroads? Middlesex.
Otherwise?
Number of Passengers carried per year?
Industrial Pursuits? Manufacturing, etc.
Streets, how Lighted? Gas and Oil.
Number of Lamps? 62 Gas, and 45 Oil.

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	. . . . . .	. . . . . .	. . . . . .	$1,990 28	$2,100 00
If Gas, Am't paid? . .	. . . . . .	. . . . . .	. . . . . .	689 32	768 15

Number of Paupers? 15.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	. . . . . .	. . . . . .	. . . . . .	95	192

B. FAULKNER, *Chairman Selectmen,*

STATISTICS RELATING TO THE TOWN OF REVERE.

AREA — not including Streets?	3,400 acres.
" Upland?	2,100 "
" Marsh or Lowlands?	1,300 "
" reserved for Parks or Squares?	
" Improved?	
" Unimproved?	
Miles of Streets?	16⅓ miles.
Paved?	
Macadamized?	

	1868.	1869.	1870.	1871.	1872.
Amount expended on repairs of Streets? .	$1,102 88	$10,161 25	$12,627 00	$5,954 66 502 00	} $5,565 43
Do. laying out and widening Streets? . .	. . . . . .	1,750 00	1,513 00	2,757 10	3,740 41
Miles of Sewers? . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Am't exp'd on Sewers?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

Line of Sewerage?

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	$831,500 00	$885,475 00	$913,225 00	$1,004,300 00	$1,602,285 00
Number of Polls? . .	220	245	250 00	275	350
" " Building?	. . . . . .	278	297	. . . . . .	376
" Legal Voters?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	230

	1860.	1865.	1870.
Population?	921	858	1,197

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	$14,303 50	$11,002 00	$14,586 00	$16,638 50	$22,811 52
City or Town?	11,783 00	9,322 00	12,486 00	14,538 00	21,411 50
County?	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .
State?	2,520 00	1,680 00	2,100 00	2,100 00	1,420 00
Rate per Thousand? .	15 60	11 50	14 00	15 00	13 80

Debt of? $43,000.

When due? $5,000, 1873; $4,000, 1874; $12,000, 1875; $3,000, 1876; $10,000, 1878; $9,000, 1881.

Rate of Interest? 7 p. cent; 5½ p. cent.; 7 per cent.; 6½ per cent.; 7 per cent.; 6½ per cent.

Water Supply?
If Water Works, Capacity?
Cost?
Fire Department — Number of Engines, etc? 1 Hand Engine and Hose Carriage.
Expense, 1872?
Fire Alarm?
Number of Police? 10 occasional.
Cost of Police Department for 1872? $487.50.

		High.	*Grammar.*	*Primary.*	*Mixed.*	*Intermed'e.*
Number of Public Schools,	1872? . .	. . .	1	2	1	2
" " Seats for Pupils,	" 340 .	. . .	. . . . .	. . . . .	. . .	. . . . .
Average Attendance,	" . . .	. . .	44	78	20	67
Cost of Teaching, per Scholar,	" $17 00	. . .	. . . . .	. . . . .	. . .	. . . . .

Number of Children from 5 to 15 years of age, in 1872? 272.
Estimated Value of Public School Property " $19,600.
Total Value of Public Property " $30,000.
Value of Property Exempt from Taxation "
Public " " " " "
Private " " " " " 2 Churches, about $12,000.
Public Institutions?
City or Town?
County?
State?
Number of Residents doing business in Boston? 68.
Communication with Boston?
Steam Railroads? Eastern Railroad.
Street " Lynn & Boston.
Otherwise?
Number of Passengers carried per year?
Industrial Pursuits? Brickmaking and Farming.
Streets, how Lighted?
Number of Lamps?

	1868.	1869.	1870.	1871.	1872.
Amount Expended? .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	. . . . . .

If Gas, Rate paid?
Number of Paupers? 4.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	. . . . . .	. . . . . .	. . . . . .	28	17

JOHN P. PEIRCE.

STATISTICS RELATING TO THE CITY OF CHELSEA.

Area — not including Streets?	1,026 acres.
" Upland?	400 "
" Marsh or Lowlands?	620 "
" reserved for Parks or Squares?	135,200 feet.
" Improved?	All of the above.
" Unimproved?	

Miles of Streets? 44 9-10.
Paved? About 35,000 yards.
Macadamized? None, all gravelled.

	1868.	1869.	1870.	1871.	1872.
Amt. expended on repairs of Streets? .	$21,430 53	$18,767 74	$29,326 99	$28,738 28	$55,459 38
Do. laying out and widening Streets? .	. . . . . .	. . . . . .	. . . . . .	. . . . . .	100,000 00
Miles of Sewers? 15 1-10 miles					
Amt. exp'd on Sewers?	13,584 51	34,934 28	15,528 20	78,578 92	16,454 60

Line of Sewerage? Chelsea Creek and Mystic River.

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	$7,701,375 00	$8,256,900 00	$9,381,175 00	$12,052,200 00	$16,707,343 00
Number of Polls? .	2,959	3,324	3,683	4,143	4,842
" of Buildings, Dwellings?	2,314	2,425	2,526	2,882	3,265
No. of Legal Voters?	2,336	2,453	2,844	2,935	3,616

	1860.	1865.	1870.
Population?	13,395	14,403	18,547

	1866.	1868.	1870.	1871.	1872.
Total amount raised by Taxation?	$171,786 00	$194,989 50	$249,330 00	$229,095 51	$277,557 09
City or Town?	140,600 00	193,900 00	222,875 00	202,875 00	252,500 00
State?	24,150 00	16,000 00	20,125 00	20,125 00	17,560 00
Rate per Thousand? .	20 00	20 00	20 00	16 50	16 00

Debt of, in 1872? $1.321,200.00.
" when due? 10, 20, and 30 years.
Rate of Interest? 6 per cent.
Water Supply? Charlestown.
If Water Works, Capacity?
do Cost?

Fire Department — Number of Engines, etc? 3 Engines, 3 Hose.
1 Hook & Ladder.

Expense, 1872? $17,700 53.
Fire Alarm?
Number of Police? 21.
Cost of Police Department for 1872? $25,815 00.

		High.	*Grammar.*	*Primary.*
Number of Public Schools, 1872?		1	3	8
" " Seats for Pupils, "	3,528			
Average Attendance, 1872, in all	2,775			

Cost of Teaching, per Scholar, 1872? $22.
Number of Children from 5 to 15 years of age, in 1872? 3,192.
Estimated Value of Public School Property, " $476,000 00.
Total Value of Public Property, " $770,500 00.
Value of Property Exempted from Taxation " $3,120,000 00. Of this amount, United States own $1,900,000 00; Churches, $410,000; City, $770.
Public Property exempted from Taxation, in 1872? $3,110,000 00, including Church property.
Private " " " " " $10,000 00.
Public Institutions? 1 U. S. Naval Hospital, 1 Marine do, 11 Churches.
City or Town? 12 School Houses, 1 Lockup, 6 Engine and Hose Houses.
County?
State?
Number of Residents doing business in Boston? Estimated 8 or 10,000.
Communication with Boston? Steam Cars, Horse Cars, and Ferry Boats.
Steam Railroads? 2,500 daily.
Street " 4,000 "
Otherwise, Ferry Boats and Bridges? 9,000 "
Number of Passengers carried per year?
Industrial Pursuits? 2 Iron Foundries, 1 Linseed Oil Mill, 2 Chair and Furniture Factories, 1 Whiting, 1 Paper Stationery, 2 Rosin Oil, and 3 Tar Factories, 1 Fish Oil, 1 Phosphate Factory, 1 Bakery, 2 Rubber Factories, 1 Drain Pipe Factory, 1 Laundry and Dye House, 1 Woollen Mill, 3 Soap Factories, 1 Box Factory, 1 Engine Builder, 1 Britannia Ware Factory, 1 Type Foundry, 1 Brick Factory, 1 Tannery, 2 Currier's Shops, 1 Salt Mill, 1 Fire Brick Factory, 3 Planing Mills, 1 Gas Co., 1 Brass Foundry, 1 Clothing Factory.
Streets, how lighted? Gas and Kerosene.
Number of Lamps? 380; Gas 290, Oil 90.

	1868.	1869.	1870.	1871.	1872.
Amount Expended?	$7,268 64	$9,829 84	$11,902 82	$17,109 21	$29,274 69

If Gas, Rate paid? 1½ cents per hour, or $3.25 per 1,000 feet.
Number of Paupers? No almshouse, 8 Lunatics.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths?	315	379	332	341	416

STATISTICS RELATING TO THE TOWN OF WATERTOWN.

AREA — not including Streets? 244¾ acres nearly. This includes Charles River, 75 acres; Millponds, 6 acres; Fitchburg R. R. track land, about 30 acres, and 271¼ acres other land not taxable. The taxable area is 2,055½ acres.
" Upland? 2,311¾.
" Marsh or Lowlands? 55 acres.
" reserved for Parks or Squares?
" Improved?
" Unimproved?
Miles of Streets? About 28 miles accepted.
Paved?
Macadamized? 5¾ miles, main avenues.

	1868.	1869.	1870.	1871.	1872.
Am't expended on repairs of Sts. & Bdgs.?	$9,900 00	$13,000 00	$13,000 00	$11,650 00	$11,500 00
Do. Laying out and widening Streets? .	400 00	500 00	......	1,350 00	1,665 00
Miles of Sewers? . . .	......	......	......	......	......
Am't exp'd on Sewers?	......	......	......	......	......

Line of Sewerage? We have about 2 miles of Sewerage on various streets, all tending towards or entering into Charles River; cost about $1,100.

	1864.	1866.	1868.	1870.	1872.
Valuation of Town or City?	$2,485,168 00	$3,045,510 00	$3,461,475 00	$4,165,080 00	$6,772,110 00
Number of Polls? . .	888	978	978	1,040	1,170
" " Buildings?					
Dwelling-houses? .	462	480	515	587	685
No. of Legal Voters? .	580	594	606	644	736

	1860.	1865.	1870.
Population?	3,270	3,779	4,337

	1866.	1868	1870.	1871.	1872.
Total amount raised by Taxation?	$44,593 14	$46,262 88	$58,308 58	$72,276 75	$80,896 48
City or Town?	34,004 77	38,109 51	48,494 07	62,462 24	70,880 11
County?	2,218 37	2,573 31	2,839 51	2,839 51	3,676 37
State?	8,370 00	5,580 00	6,975 00	6,975 00	6,340 00
Rate per Thousand? .	14 00	12 80	13 50	12 50	11 00

Debt of Feb. 10, 1872? The town debt was $66,193.
" when due? At various times. See accompanying Town Report.
Rate of interest? From 5½ to 7 per cent. " " " "

Water Supply? Wells, Cisterns, and Reservoirs.
If Water Works, Capacity?
Cost?
Fire Department—Number of Engines, etc.? One Steamer. 2 Hunneman Hand Engines.
Expense, 1872? $3,662.40.
Fire Alarm?
Number of Police? 2.
Cost of Police Department for 1872? $2,059.44.

	High.	*Grammar.*	*Primary & Intermediate.*
Number of Public Schools, 1872? . .	1	4	10
" " Seats for Pupils " . . .	70	280	605
Average Attendance?	60.5	146	460

Cost of Teaching, per Scholar?		. Average in all the schools $24,73.
Number of Children from 5 to 15 years of age, in 1872?		884.
Estimated Value of Public School Property	"	$89,550.
Total Value of Public Property	"	204,542.
Value of Property Exempted from Taxation	"	780,000.
Public " " " "	"	204,543.
Private " " " "	"	575,457.

Public Institutions?
City or Town?
County?
State?
Number of Residents doing business in Boston? About 150, including clerks.
Communication with Boston? Steam and Street Railroads and Highway.
Steam Railroads? Watertown Branch of Fitchburg R. R.
Street " Union Railway Company.
Otherwise?
Number of Passengers carried per year by Horse R.R.? 66,000. By Fitchburg Branch? 175,000. Information obtained from Depot Masters.
Industrial Pursuits? Mechanical, Mercantile and Agricultural.
Streets, how Lighted? By Gas.
Number of Lamps? 45.

	1868.	1869.	1870.	1871.	1872.
Amount expended? .	$428 81	$538 31	$600 48	$678 92	$938 73

If Gas, Rate paid? $4.00 per 1,000 feet.
Number of Paupers? 11 permanent at Alms-house; 10 heads of families assisted.

	1868.	1869.	1870.	1871.	1872.
Number of Deaths? .	57	93	73	96	82

By direction of Selectmen,

JOSEPH CRAFTS, *Town Clerk.*

LIST OF TOWN NOTES,

TIME THEY MATURE, ETC.

List of Town Notes, Time they Mature, and Rate of Interest, with other Remarks.—1873.

Town Debt.	Amount.	Rate.	Semi-Ann'l Interest.	Interest Due.	Notes Mature on.	Remarks.
Lowell Inst. for Savings.						
Note of October 7, 1856	$8,000	5¾	$230 00	Oct. 7 and April 7.	Oct. 7, 1876.	
Note of October 6, 1853	4,725	5½	130 43¾	Oct. 6 and April 6.	Oct. 6, 1877, last payment,	$1,000 payable annually on Oct. 6.
Note of April 21, 1868	5,500	6	165 00	Oct. 21 and April 21.	Oct. 21, 1888.	
Treasurer of Commonwealth.						
Note of May 23, 1868	9,268	6	278 00	May 23 and Nov. 23.	May 23, 1878.	Borrowed to purchase new Cemetery.
Note of December 20, 1870	4,500	6½	146 25	June 20 and Dec. 20.	Dec. 20, 1880.	Borrowed to build Reservoirs.
Boston Five Cent Savings Bank.						
Note of August 5, 1864	10,000	6	300 00	Sept. 16 and Mar. 16.	Sept. 16, 1878.	Borrowed for War purposes.
Luke Forbes, Note, Nov. 20, 1863	2,000	7	70 00	Nov. 20 and May 20.	On demand.	
Mrs. Luke Forbes, Note, Dec. 1, 1869 . .	1,000	7	35 00	June 1 and Dec. 1.	" "	
Mrs. Eliza Glines, Note of Feb. 2, 1863 .	1,000	7	35 00	Feb. 2 and Aug. 2.	" "	
Eliza I. Norcross, Note of Feb. 17, 1864 .	200	6	6 00	Feb. 17 and Aug. 17.	" "	
Ann I. Norcross, Note of Oct. 2, 1867 . .	700	6	21 00	Oct. 2 and April 2.	" "	
Harriet N. Faxon, Note of Oct. 1, 1869 .	300	6	9 00	Oct. 1 and April 1.	" "	
Messrs. Hinckley & Co., Eastport, Me.						
Note of May 7, 1872	4,000	7	140 00	Nov. 7 and May 7.	" "	Borrowed for build'g School-house, etc. Alterations at South School-house.

Note of August 13, 1872	4,000	7	140 00	Feb. 13 and Aug. 13.	On demand.	Borrowed for building School-house.
Eastport Savings Bank.						
Note of July 20, 1872	2,100	7	73 50	Jan. 20 and July 20.	" "	" " " "
Alden Bradford, Eastport, Me.						
Note of July 20, 1872	2,000	7	70 00	Jan. 20 and July 20.	" "	" " " "
Watertown Savings Bank.						
Four Notes, April 1, 1871, Feb. 8, 1872, April 22, 1872	6,900	7	241 50	Oct. 1 and April 1.	" "	Borrowed for building Engine-house, and alterations in Town Hall, and for new hose and furniture for Engine-house. Vote of Town for 1871.
June 7, 1872	. . . .	. .	. . . .	. . . .	. . . . . .	Note of April 1, 1871, to take up note at Waltham Savings Bank, $900.00.
Total Town Debt	$66,193		$2,090 72¾			

JOHN K. STICKNEY, *Town Treasurer.*

WATERTOWN, February 10, 1873.

TABLES A, B, C, AND D.

"A."

Real Estate Valuation of Boston Highlands, from 1867 to 1873, inclusive.

For 1867, we give the valuation of Roxbury.
Roxbury was annexed to Boston, January, 1868.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.
Roxbury .	$18,265,400	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Ward 13 .	. . . . .	$3,961,200	$5,044,200	$6,557,000	$7,360,300	$8,641,700	$9,448,700
" 14 .	. . . . .	9,079,800	13,806,400	14,977,900	17,475,100	21,750,200	22,736,200
" 15 .	. . . . .	8,314,400	11,584,800	13,652,000	16,728,100	24,283,800	27,406,200
Total . .	18,265,400	$21,355,400	$30,435,400	$35,186,900	$41,563,500	$54,675,700	$59,591,100

The following shows the number of Polls, from 1867 *to* 1873, *inclusive.*

	1867.	1868.	1869.	1870.	1871.	1872.	1873.
Roxbury .	6,006	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Ward 13 .	. . . . .	1,862	1,956	2,113	2,200	2,420	2,529
" 14 .	. . . . .	2,015	2,320	2,840	3,217	3,500	3,671
" 15 .	. . . . .	2,899	3,321	3,682	4,236	4,872	5,265
Total . .	6,006	6,776	7,597	8,635	9,653	10,792	11,465

The following shows the gain in each year of Real Estate and Polls.

	Real Estate.	Polls.	Remarks.
From 1867 to 1868	$3,090,000	770	
" 1868 " 1869	9,080,000	821	
" 1869 " 1870	4,751,500	1,038	
" 1870 " 1871	6,376,600	1,018	
" 1871 " 1872	13,112,200	1,139	
" 1872 " 1873	4,915,400	673	
Total gain in six years	$41,325,700	5,469	

Dorchester was annexed in 1870. *The following is the valuation from* 1869 *to* 1873, *inclusive.*

	1869.	1870.	1871.	1872.	1873.
Dorchester . . . . Ward 16, after 1869.	$12,826,200	$14,027,400	$18,175,900	$23,741,200	$26,823,900

The following shows the number of Polls from 1869 *to* 1873, *inclusive.*

	1869.	1870.	1871.	1872.	1873.
Dorchester . . . . Ward 16.	3,047	3,238	3,541	3,883	3,999

The following shows the gain each year in Real Estate and Polls.

	Real Estate.	Polls.
From 1869 to 1870	1,201,200	191
" 1870 " 1871	4,148,500	303
" 1871 " 1872	5,565,300	342
" 1872 " 1873	3,082,700	116
Total gain	13,997,700	952

Real Estate Valuation of Ward One, Boston, from 1868 *to* 1873, *inclusive.*

	1868.	1869.	1870.	1871.	1872.	1873.
	$9,459,300	$10,569,100	$11,491,900	$12,180,000	$13,423,950	$15,322,000
Gain each year of Real Estate.	. . . . . .	$1,109,800	$922,800	$688,100	$1,243,950	$1,898,050
No. of Polls . .	5,167	5,408	5,894	6,076	6,743	7,220
Gain of Polls .	519	241	486	182	667	477

Total Gain Real Estate and Polls in 5 years . . . . 5,862.700 — 2,051

Real Estate Valuation of Wards 7 *and* 12, *from* 1868 *to* 1873, *inclusive.*

	1868.	1869.	1870.	1871.	1872.	1873.
WARD 7 . .	$11,904,800	$13,956,000	$17,153,400	$18,824,000	$21,162,200	$23,407,100
" 12 . .	8,428,800	10,390,300	12,024,100	14,040,600	16,870,300	18,450,800
Total . . .	$20,333,600	$24,346,300	$29,177,500	$32,864,600	$38,032,500	$41,857,900

The following shows the number of Polls from 1868 *to* 1873 *inclusive.*

	1868.	1869.	1870.	1871.	1872.	1873.
WARD 7 . .	3,351	4,387	4,464	5,870	6,700	7,096
" 12 . .	3,104	3,618	4,280	4,971	5,620	6,160
Total . . .	6,455	8,005	8,744	10,841	12,320	13,256

The following shows the gain each year of Real Estate and Polls.

	Real Estate.	Polls.
From 1868 to 1869	4,012,700	1,550
" 1869 " 1870	4,831,200	739
" 1870 " 1871	3,687,100	2,097
" 1871 " 1872	5,167,900	1,479
" 1872 " 1873	3,825,400	936
Total Gain	21,524,300	6,801

RECAPITULATION.

	1868.		1873.		
Valuation of Ward 1	$9,459,300	Valuation of Ward 1	$15,322,000	Gain in five years	$5,862,700
" " " 7 and 12	20,333,600	" " " 7 and 12	41,857,900	" " "	21,524,300
" " Boston Highlands . . .	21,355,400	" " Boston Highlands . .	59,591,100	" " "	38,235,700
Val. of Ward 16 (1869) $12,826,200 .		" " Ward 16	26,823,900	" in four "	13,997,700
Total	$63,974,500	*Total*	$143,594,900	*Total*	$79,620,400

This Valuation and increase on the same is for Real Estate *alone*, so it does not show the total valuation.

The gain in Polls for Ward One,	5 years, was	2,051
" " " " " " Seven and Twelve,	5 " "	6,801
" " " " " " Boston Highlands,	6 " "	5,469
" " " " " " Ward Sixteen,	4 " "	952
Total gain		15,273

"B."

POST OFFICE DEPARTMENT,
WASHINGTON, D. C.,
June 25, 1873.

Ordered: Discontinue the following-named post-offices in the State of Massachusetts, viz. : —

Charlestown, Chelsea, East Cambridge, Cambridgeport, Cambridge, North Cambridge, Somerville, East Somerville, Harrison Square, Dorchester, Mattapan, and Neponset Village; and transfer all the premises leased by the department and now occupied as post-offices, together with all the property belonging to the Post Office Department, and the letter-carriers at the several offices, to the Postmaster at Boston.

Also allow him thirty-five additional carriers, with pay as follows, viz. : ten at $600 a year; ten at $700 a year; fifteen at $800 a year; and three horses at $30 a month, to be used in the carrier service.

Establish stations as follows, viz. : —

At Charlestown, to be known as Charlestown.

At Chelsea, to be known as Chelsea.

At East Cambridge, to be known as East Cambridge.

At Cambridgeport, to be known as Cambridgeport.

At Cambridge, to be known as Cambridge.

At North Cambridge, to be known as North Cambridge.

At Somerville, to be known as Somerville.

At East Somerville, to be known as East Somerville.

At Harrison Square, to be known as Harrison Square.

At Dorchester, to be known as Dorchester.

At Mattapan, to be known as Mattapan.

At Neponset Village, to be known as Neponset.

To be under the jurisdiction of the Postmaster at Boston, and within the delivery of that office.

It is further ordered, that the station heretofore established at East Boston shall hereafter be known as East Boston; the station at South Boston as South Boston; the station at South End as South End; the station at Roxbury as Roxbury.

This order to take effect July 1, 1873.

(Signed), JNO. A. J. CRESSWELL,
Postmaster General.

"C."

CITY OF BOSTON, CITY HALL,
COCHITUATE WATER BOARD OFFICE, March 19, 1873.

HAMILTON A. HILL, ESQ., *Chairman, etc.*: —

SIR,— Enclosed I hand letter from Joseph P. Davis, Esq., City Engineer, which fully answers the inquiries made in your note of 15th inst.

Yours respectfully,

CHAS. H. ALLEN,
President Cochituate Water Board.

"D."

Office of City Engineer, City Hall,
Boston, March 17, 1873.

Charles H. Allen, Esq.,
President Cochituate Water Board: —

Dear Sir, — The consumption of water in Boston (excluding East Boston, which is supplied from the Mystic Works) has been, during 1872, at the rate of fifteen million gallons per day.

The minimum capacity of the Cochituate district, — that is, its capacity in the season of greatest drought, — I have estimated at twelve million gallons daily; its average capacity is about eighteen millions. The Sudbury river, or that portion of it taken by the city, will furnish an average supply of about seventy million gallons per day, and one of forty millions in the season of greatest drought.

The two sources (Cochituate and Sudbury) are sufficient to supply Boston and all the towns between the Neponset and Charles rivers, to Mother brook, for the next forty or fifty years.

These matters are fully considered in the report which you have this day sent to the City Council.

Yours truly,

JOS. P. DAVIS.

HAMILTON A. HILL'S REPORT.

ANNEXATION.

The undersigned, one of the Commissioners appointed by His Honor the Mayor, in pursuance of the foregoing order, begs respectfully to submit his

REPORT.

To the Honorable the City Council of Boston: — The general principle of annexation has long since been accepted by the people of Boston. With an area originally of less than seven hundred acres, the territorial limits of the city have from time to time been expanded, partly by the filling of flats, but chiefly by the improvement or acquisition successively of South Boston, East Boston, Roxbury and Dorchester, until at length they have come to comprise nearly ten thousand acres. Few among us, probably, would now call in question the wisdom of what has thus far taken place in this regard. The precedent has been fully established, that under proper conditions our municipal boundaries may be extended with advantage to all parties concerned; and in reference to projects for the further annexation of suburban communities to the capital, now occupying the public mind, it will be necessary not so much to justify the policy under which these may be carried into effect, as to weigh the force of the consideration presented in connection with each particular case.

The cities of the old world and the older cities of the western hemisphere have grown first in population and then territorially; and their territorial growth has been with a view not only to make more room for those actually dwelling within the municipal limits, but also to recover the population which has overflowed and passed beyond them. More than two centuries ago, a Spanish ambassador, in conversation with his sovereign, after his return from London, said, "Madam, I believe there will be no city left shortly, for all will run out of the gates to the suburbs." The London of to-day exhibits, in the structure of its government, two marked stages of development, differing each from the other, no less in character than in epoch, both, however, being equally the result of efforts to regain a hold upon the population which had previously been lost: the first of these was the gradual absorption into the municipality of the parishes lying "without the walls;" the second was the erection of the city proper, with the circumjacent boroughs, into a metropolis, or, as it has been called, "a confederation of free towns."

Undoubtedly a keener interest is manifested in the various propositions at the present time under discussion for enlarging the area of Boston, by the people of the suburban towns which it is sought to annex to the city, than by our own citizens, or, to discriminate more accurately, by those who transact business in Boston, but have their dwellings in the suburbs, as compared with those whose houses as well as their warehouses and offices are here. And it is not strange that this should be the case, because the former class is constantly reminded of the many inconveniences and complications which come from a divided citizenship and a twofold allegiance, and, naturally enough, seeks some way of deliverance from them. And yet, in truth, those who have their residence and cast their votes in Boston are, to say the least, as deeply concerned in every annexation project which is or may be mooted, as their neighbors beyond the city limits, and it is incumbent upon them to recognize this and to act upon it. The undersigned supposes it to be the duty of the commission to give prominence in its report to those considerations on this subject which especially relate to the city of Boston as at present constituted. At the same time he cannot but see that, in the broadest view, the interests of Boston and of the immediate suburbs, as affected by annexation, either in general or in particular instances, are and must be substantially in accord.

A glance at the statistics will be sufficient to show what has been the recent growth of Boston in population and in traffic. During the quarter of a century ended in 1870, notwithstanding the steady movement of our citizens through all this period from the city to the suburbs, the population increased from one hundred and fourteen thousand to upwards of a quarter of a million; that is to say, it more than doubled. Between 1865 and 1870, the gain was thirty per cent. The taxable valuation of the city on the first of May, 1872, amounted to nearly six hundred and eighty-three millions of dollars, having more than doubled in eight years. It is difficult to ascertain the rate of increase of late years in the general business of Boston, but it is safe to assume that it has more than doubled during the last ten years. The dutiable value of foreign merchandise imported into the port of Boston in 1872 was seventy-two and a half million dollars, against sixty-three millions in 1871, and forty-eight and a half millions in 1870. This shows a gain of nearly one-sixth during the last twelve months, and of fifty per cent. in the last two years. The exports from Boston to foreign countries in 1872 amounted to about twenty-three and a half millions of dollars, against nineteen millions and a half in 1871, and twelve millions in 1870. This gives a gain of twenty per cent. for the last year, and of more than ninety per cent. since 1870. The gain in the entire foreign trade of the port for the two years last past has been sixty per cent.

The undersigned would not overlook the fact that the fire of the ninth and tenth of November last destroyed a large amount of accumulated wealth, and arrested for the moment the activity of certain branches of business among us; but he remembers that the total loss by the fire, leaving insurance entirely out of the account, has been estimated by the Chairman of the Board of Assessors at seventy-five million dollars, a sum exceeding by only five millions, the increase in the valuation of the real and personal property of Boston in 1872, over the valuation of 1871. He believes, also, that the commercial prosperity of the city will be found to have received only a temporary check from this calamity, seeing that the causes which have led to the recent remarkable development of our local trade and commerce were not in any manner directly touched by it. Of these causes it will be sufficient to name only three: (1st) the stimulus given to the manufacturing industries of New England which have their centre in Boston, by the events of the last ten or twelve years; (2d) the advance made in ascertaining and applying the capabilities of railways for purposes of transportation, which has brought carriage by land into sharp competition with water conveyance, and which for the most part has relieved Boston from the disadvantage under which it has hitherto labored in not occupying a position at the outlet of an internal water system; and (3d) the improvement which has taken place along the lines and at the termini of the railway companies more immediately connected with the city. These causes, and others which might be mentioned, are still operative, or rather, so far as relates to some of them, they have only just begun to be operative; and there is every indication that, notwithstanding the fire, the growth of our trade will be more rapid and more extended during the ten years to come than it has been during the last decade. The receipts of grain here, mostly for export by one railway line alone, increased from eight hundred thousand bushels in 1868, to nearly seven million bushels in 1872; and this is only the beginning of the business that may be transacted by us in this one article; the source of supply is practically illimitable, and our receipts will be as ample as our facilities for taking care of them shall prove to be. The recent development of our export trade in provisions is hardly less remarkable than of that in grain. While by the multiplication and the improvement of our means of communication with the West, our trade with that part of the country has been and will still further be increased, there is an evident tendency at work to concentrate the business of New England more and more in Boston; under a liberal commercial policy on the part of the General Government, also, we may hope for a large increase of our trade with the eastern portion, and especially the maritime provinces, of British North America.

The undersigned feels confident, therefore, in the expression of the opinion, held by him in common with a large number of his fellow-citizens, that an era of commercial growth and prosperity lies immediately before our city, such, perhaps, as it has never yet passed through. This expansion of our trade will bring with it, of course, an increase of population, additional traffic in our streets, and the appropriation of wider districts within the city for purposes of business. We may be sure that we shall never see our streets less crowded than they are at this time, or find ourselves less straitened for room than we now are. Should we not, then, so far as we may be able, anticipate and provide for the requirements which will soon be pressing upon us?

Manifestly, it is of absolute importance that the city should have space in which to grow. The demands made by business for all the room needed by it, are inexorable; streets, neighborhoods and districts must surrender at its summons, for no other uses will warrant the expenditure of the money which it can afford to pay for their occupancy. It is probable that one result of the great fire will be to extend faster than would otherwise have been the case the area devoted to business, it being unlikely that all the firms which have been so widely scattered will return to their old places in what is now the burnt district. But be this as it may, experience would seem to teach that the encroachments of trade upon those portions of the city originally designed and reserved for dwelling-houses are steady and irresistible; and there is every reason for expecting that they will be no less exacting in the future than they have been in the past. It is none too soon for us to inquire where the dwellings of our citizens are to be situated between the present time and the close of the century. A large portion of what is now known as the city proper will shortly be devoted to business purposes, and it will be impossible to find room for all the private residences, the number of which will of course increase with the increase of business, within the present municipal limits. With no new annexation of territory, the flow of population from the city to the suburbs, although checked temporarily by the acquisition of Roxbury and Dorchester, must continue, and ultimately in greater volume than ever before. But is it for the interest of Boston to allow the majority of its citizens thus, for all the purposes of citizenship, to migrate from it? Can the municipality afford to lose the influence, the service and the votes of its active business men, and of its artisans, any more than their proportionate contributions toward the maintenance of the local government? The undersigned believes not; nor does he think that it will prove to be for the advantage of either the suburban communities or the Commonwealth, that the former shall be built up at the expense of the capital.

The point then being conceded that the municipality of Boston should contain not only offices, warehouses and manufactories, but residences also for a majority of its people engaged in industrial and professional pursuits, and further, that this is not possible within the area of the city as it is at present bounded, the inquiries arise, to what extent and how rapidly should additional territory be acquired ; and upon what plan, if any, should the further territorial extension of the city take place? Answers to these questions will perhaps be suggested, in connection with a consideration of some of the propositions relating to the subject now before the community.

I. A bill has been introduced in the State Senate during the present session and has received attention from the joint legislative committee on towns, providing for the immediate enlargement of the city of Boston and the county of Suffolk, by the annexation of all the territory "comprised within the limits of the towns of West Roxbury and Brookline, in the county of Norfolk; the towns of Brighton, Watertown, Belmont, Arlington, Medford, Malden and Everett, and the cities of Charlestown, Cambridge and Somerville, in the county of Middlesex; the towns of Revere and Winthrop, and the city of Chelsea, in the county of Suffolk." This plan is broad and far-reaching, and its advocates are entitled to commendation for the liberality and the comprehensiveness of their views. They judge fairly of the probable commercial growth of Boston, in the not remote future, and they appreciate clearly the advantages which would result both to the city and to the people doing business here, could all the latter, with their families, find suitable habitations within the municipal boundaries. At the same time, the undersigned considers the scheme too arbitrary in its character, to be adopted as a whole, and not altogether practicable, in view of the number and variety of the interests which it seeks, but in his opinion, would fail, should it become a law, to harmonize. The feeling undoubtedly prevails largely among our citizens, that such further annexation of territory as may be made, ought to take place, not as has been the case in the past, town by town, and under the pressure of an immediate necessity, but by the acquisition at one time of territory sufficiently extensive to enable the city government to provide in advance, upon a well-defined system and on an ample scale, for highways, water, drainage and sewerage, and for other wants, which Boston has or will have in common with the cities and towns now surrounding it. But although this perhaps is the prevalent feeling, the measure now under consideration, known as Mr. Senator Potter's plan, whatever the opinion concerning it may be in the various suburban communities interested, is generally regarded in Boston as proposing to go further and faster than is expedient or perhaps safe. Did the plan contemplate simply a metropolitan or federal union among all the cities and towns named in the bill, there might be less objection to it; but providing, as it does, for the complete organic unification of them all, the advance which it is sought to gain at once and by a simple stride seems much beyond what it is wise to attempt. This would appear also to be the judgment of the Legislature on this subject.

II. Another plan now before the public is the annexation to Boston of the whole or a large portion of the remaining territory bounded by the Neponset river on the south, the Charles on the north and west, and Motherbrook on the west. The various towns enclosed by these streams, manifestly, for many purposes, form a naturally bounded district by themselves. So far as relates to drainage, sewerage and highways, if to nothing else, they ought to be under one general and comprehensive system of government. To allow them all to continue to regulate these matters, each in its own way, can only lead to permanent confusion, and, in reference to drainage and sewerage, must greatly endanger the public health. A bill now before a committee of the Legislature provides for the appointment of a Commission, consisting of three competent persons, two of the number to be civil engineers, to devise and report a comprehensive plan for the grades, streets, avenues, drainage and water supply of all that territory which is enclosed by Neponset river, Charles river and Mother brook, embracing the city of Boston, the whole of the towns of Brookline, Brighton, West Roxbury and Newton, and a portion of the town of Hyde Park; and to do the same also for the territory lying between the Charles and the Mystic. In the arrangement of the plans, the bill provides that the present and prospective wants of the territory shall be fully taken into the account.

As an illustration of the necessity for joint municipal action which often exists, for the abatement of nuisances and for the preservation of the public health, mention may be made of the action of a Commission, appointed by the Legislature of 1872, to devise a plan for drainage in a district bordering on Miller's river in Cambridge and Somerville. In the last annual report of the State Board of Health, it is said: —

"In connection with the investigation concerning Miller's river, and the practicable plan of sewerage reported by the Commission, we would respectfully invite the attention of the Legislature to the need of some comprehensive and harmonious system for the drainage of the whole metropolitan district. Cambridge and Somerville, in the difficulties they have encountered by the joint use of an insufficient outlet for their sewerage, may fairly represent other cities and towns in the immediate vicinity of Boston, whose trouble will come very soon from similar causes. A competent engineer, surveying the whole territory without regard to the limitation of arbitrary lines representing the limit of jurisdiction of a single municipality, has, as we believe, solved a problem which might have vexed Cambridge and Somerville for a generation."

The towns outside of Boston lying within the Charles, the Neponset and Mother brook, are Brookline, Brighton, Newton, West Roxbury, and in part Hyde Park. To some of them the undersigned desires to make brief reference.

Brookline was originally included in and formed a part of Boston. It so continued, until incorporated as a separate town, in 1705, and it continued to be a part of Suffolk County until 1793, when it was set off, with other towns, to constitute the county of Norfolk. At the time when Brookline was set off from Boston, what is now known as the Back Bay, then called Cambridge Bay, divided Boston into two parts, and the only highway for communication between them was over the Neck and through Roxbury, a distance of three miles. When the Milldam was completed in 1821, the distance between Boston and Brookline was shortened to two miles; but the road passed over flats and marshes, it was much exposed in rough weather, and a toll was collected on travel upon it, so that practically the two communities still remained far apart. During recent years, the process of filling the flats and marshes has been going forward steadily and rapidly, until now the solid land extends for more than a mile on the side of Boston towards Brookline, and nearly half a mile on the side of Brookline towards Boston, leaving between the two a gap of little over half a mile, which is lessening continually, and will disappear altogether before the end of the year. The two localities are soon to be brought more closely together geographically than they ever yet have been, and the reason for giving them distinct local governments, which hitherto and for a long time has had weight, will no longer exist. If this were all, however, and there were no positive reasons for constituting them politically one again, perhaps it would not be worth while to make a change. But all this filled-up territory will be densely populated within the next quarter of a century; and it will eventually be as impossible to show by any appearance in the streets, where, at an earlier time, Boston ended and Brookline began, as it is in London to-day to indicate where what is known there as the city ends and Westminster begins. This newly made land betweeen Boston and Brookline, for all sanitary purposes and for purposes of communication, will need to be under the same jurisdiction as the districts on either side of it, and consequently these districts ought to be brought under the same jurisdiction. Of the territory to be occupied and improved, lying between Boston and Brookline, it was said, in substance, recently, before the legislative committee on towns: —

"West of West Chester Park, and within three miles of the State House, there lies a territory of nearly or quite six hundred acres, as yet wholly unprovided with streets; and within the circumference of another mile, there are six hundred acres more, partly in Boston and partly in Brookline, mostly used at present for farming and pasture lands, with only a few crooked and insufficient streets. All this territory, and as much more next west of it, should be immediately included under one jurisdiction, embraced in one plan, and worked out on one system. The question of laying out streets for a dense population is inseparably connected with the subject of drainage and sewerage. Since the drains and sewers are chiefly laid in the streets, the latter must be determined, as to their location and grade, with reference to the flow and discharge of the former. At present only a very small portion of Brookline is partially provided with drains and sewers, and, such as these are, they operate very imperfectly.

"All the sewers and drains discharge immediately or ultimately into Muddy river, and Muddy river enters the empty basin west of West Chester Park, and the cross-dam, or Parker street. Muddy river receives and discharges the waste water of nearly or quite one-half of the area of Brookline, and of about five hundred acres of the water-shed of Boston and West Roxbury. It forms the boundary line between Boston and Brookline for nearly three-fourths of the length of that line. It is in a valley so level, that the tide flows up its course and overflows it for three quarters of its length, where it makes the boundary, leaving marshes on either side, varying in width from a few rods to a quarter of a mile. Beyond the marshes on either side rises the upland, the water-shed of which, as before stated, is into and through Muddy river. The problem of the drainage and sewerage of this territory, therefore, both in Boston and in Brookline, must be dealt with and solved as an entirety and an unit; all efforts to meet and overcome the difficulties which it presents, by the action separately of two municipalities, will prove as futile in the future as they have proved in the past."

Brookline, like all the first settled parts of Boston, never adopted any system or plan for its roads or streets. Its longest, broadest and best avenues, Brookline and Brighton avenues, Beacon street and Boylston street, were laid out and built chiefly by private corporations, and these are not only the principal streets running through the town, but also the only avenues leading to the older and principal business neighborhoods in Boston. Other roads have lately been laid out and graded, but utterly regardless of any general method or system, such as should have controlled their direction and their width, and they can be brought to approximate regularity, and to harmony with the plans of the adjacent communities, only at a very heavy expense.

Between Brookline and Brighton there is no natural boundary. They are enclosed on two sides by the Charles, and together they form an amphitheatre, the drainage of which runs to that river. The river frontage of Brighton, however, is much longer than that of Brookline; there is a good depth of water, nine feet at high tide, as far up as the Arsenal. Most of the town of Brighton is included within a five-mile line from the State House. It is said to take the lead of every other town in the Commonwealth, in the character of its roads; and there is an immense amount of pleasure travel from the city upon them. It controls the cattle-trade of eastern Massachusetts, and this makes it the most important station between Boston and Worcester, on the line of the Boston & Albany Railroad. Its territory, owing to the number of slaughter-houses which have been in operation in various places within its limits, has not been laid out and improved as most of the neighboring towns have been; but these nuisances have all been abated, and the work now performed in them will soon be transferred to the extensive abattoir recently constructed at the suggestion and under the oversight of the Board of Health, on the river bank, and to other establishments of a similar character, which may be built from time to time. The town is therefore in a most favorable condition for improvement, in connection with the adjacent territory, on a broad and comprehensive plan; and its many picturesque situations will now attract a large number of people, who hitherto have been prevented, by the circumstances to which reference has been made, from fixing their homes there.

Newton is much larger territorially than Brookline and Brighton combined, and its population exceeds that of both these towns. It contains seven or eight thriving villages, and it is now under contemplation to ask for its incorporation as a city. It is bounded on the north and west by the Charles, except that a narrow margin on the left bank of the river has been given to Watertown and Waltham. In Brighton and Newton the large reservoirs of the Cochituate Water Works are situated; they have been constructed at a large expense, and a beautiful avenue surrounds them, which is a favorite place of resort for the people of Boston.

West Roxbury was formerly a part of the town of Roxbury, and was set off by itself at or about the time when Roxbury became a city. On the annexation of Brookline, it will be bounded on three sides by the city of Boston. That part of the town situated within a radius of four miles from the centre of Boston is well settled; but there is a large district of territory to a considerable extent unimproved and unoccupied, which will soon be in requisition and which is capable of being made very convenient and very attractive for the families which the advance of trade will be driving away from the city. Here also in Bussey Farm, the very centre of the future metropolis of Boston, may perhaps be found an eligible location for one of the parks, such as our people are determined to possess for the adornment and health of the city.

Access between all these towns and the centre of the city is easy and constant. All of them are situated on the line of the Boston and Albany or of the Providence Railroad, and they have the advantage also of horse-car communication with Boston. Their people are intimately connected with the city in their daily pursuits, a large part of their male population passing back and forth every day, and many of their youth attending the schools here. The number of passengers carried in 1872 by the Boston and Albany Railroad Company between Boston and Brookline was 1,124,313. The number carried upon the same line, to and from the Allston, Brighton, Newton, Newtonville, West Newton, Auburndale, Riverside and Newton Lower Falls stations, was 1,668,514, being nearly twice the number carried during the year 1867. On the Boston and Providence Railroad, 610,705 passengers were carried during the year ended September 30, 1872, between Boston and Jamaica Plain, 405,055, between Boston and Hyde Park, and a total of 1,452,192 between Boston and the various stations from and including Boylston Street to Hyde Park.

The interests of these people are mainly with Boston; they sleep in the suburbs, but otherwise their life is here. Most of them are very desirous to be brought within the municipal limits by the process of annexation. In West Roxbury and Brighton the prevailing sentiment is largely in favor of this, and at town meetings properly called, committees have been appointed, with little if any opposition, to advocate annexation before the Legislature, and to confer with the City Government of Boston. In Brookline there is a steadily growing feeling in the same direction, although many there have opposed the measure with a positiveness and determination not elsewhere manifested. The active business men are understood to be nearly unanimous in support of annexation; but some of the more wealthy residents, and perhaps there are such instances in West Roxbury, fearing an increase in their taxes, have done all in their power to prevent the encroachment of the city limits upon their estates. The reputation, however, of many of these gentlemen for liberality and public spirit gives assurance that they will not continue to press this opposition, when they come to see that the prosperity of the capital as well as of their own neighborhoods will as a whole be promoted by annexation, and they will not be likely to put themselves in the way of the desires and the interests of the large majority of their neighbors, for the sake of some possible saving which might accrue to them in the amount of their taxes, should things remain as they now are. In Newton and Hyde Park the subject has not as yet been very much discussed, but by the people of both, probably, the annexation of their towns to the metropolis is regarded only as a question of time. This certainly is the view taken by the undersigned. He believes that the whole territory now under consideration should be brought under one municipal head. He is not prepared to recommend that the whole shall be united with the metropolis immediately, but he thinks that no time should be lost in bringing Brookline, Brighton and West Roxbury into the municipality. These communities have a common concern with the city in the great questions of highways, drainage and water supply, and they would be benefited, to say the least, equally with it, in a common administration of these interests. So far as relates to water, a late report of the Cochituate Water Board to the City Council discusses the question of supplying the Charles river district, and expresses the belief that with the addition obtained from Sudbury river, there will be no difficulty in doing so, and adequately to the wants of a million of people. In a letter addressed to your Commissioners, at their request, by the President of the Water Board, an opinion to the same effect is given in the following terms : —

"The consumption of water in Boston (excluding East Boston, which is supplied from the Mystic Works) has been, during 1872, at the rate of fifteen million gallons a day. The minimum capacity of the Cochituate district, — that is, its capacity in the season of greatest drought, — I have estimated at twelve million gallons daily ; its average capacity is about eighteen millions. The Sudbury river, or that portion of it taken by the city, will furnish an average supply of about seventy million gallons a day, and one of forty millions in the season of greatest drought. The two sources (Cochituate and Sudbury) are sufficient to supply Boston and all the towns between the Neponset and Charles rivers to Mother brook, for the next forty or fifty years."

Newton is not included in the present recommendation, for the reason that no general movement in favor of annexation has yet taken place in that town. It may be said, also, that it is further from the centre of the city than the other towns referred to, and that without its admission there will be more than enough work to be done for the present, in the departments of the Assessors, the Superintendent of Streets and the Superintendent of Sewers. It should and will come into the municipality at a future time, and the annexation of Brookline and Brighton will prepare the way for and hasten it. An exception, however, ought to be made, in favor of that small part of the town in which the Cochituate reservoir and the surrounding driveway is situated. For every reason it seems desirable that this, the property of the city, should be under the direct control of the City Government. After the annexation of Brookline and Brighton, it would be well if there could be a definite and friendly understanding between the city authorities and the authorities of Newton, in reference to the laying out of highways and sewers for the several advantage of city and town while they shall continue separate, and for their common advantage when ultimately they shall become one.

III. Another plan for municipal consolidation, embraced within the first which has passed under review, and although independent of, not necessarily conflicting with the second, has reference to the cluster of cities and towns lying to the north of the Charles and on the north shore of the harbor, and thus enumerated in Mr. Senator Potter's bill: "the towns of Watertown, Belmont, Arlington, Medford, Malden and Everett, and the cities of Charlestown, Cambridge and Somerville, in the county of Middlesex; the towns of Revere and Winthrop, and the city of Chelsea, in the county of Suffolk."

Much that has been said in this report upon the oneness of interest which subsists between the city and the suburbs has force in connection with the towns just named, and yet in many essential particulars these towns do not sustain such intimacy of relation to the metropolis as the other suburban communities to which reference has been made. Situated on the other side of a broad stream, they must of necessity have their own systems of drainage, sewerage, highways and water supply. As relates to all these very important matters, they, or most of them, have everything in common with each other, but nothing in common with Boston. It is possible that the people of these cities and towns will see it to be for their interest mutually to unite together under one municipal government, and, in this way, to administer for the common good, everything relating to the district in which they reside. It is possible also that such a municipality might, in the course of time, become united with the city of

Boston. There is a proposition now before the people of New York and Brooklyn for the union of those cities; and should this be carried into effect, and should the experiment prove successful, the territory situated on the two banks of the Charles river may perhaps also be brought under one civic government. Such a consummation would be more likely to take place, and would be more desirable, if a proper, natural and judicious union should first have taken place among the diverse communities on either side of the river respectively.

The arguments adduced in favor of the immediate annexation of Charlestown to Boston, in addition to the general considerations growing out of the relations subsisting between a capital city and its suburbs, may be briefly referred to. (1.) The question of bridges is presented, as one that cannot be satisfactorily settled except by an absolute union of the two cities. It cannot be shown, however, that Boston is not now willing to pay its proportionate share of the expense of maintaining the present bridges in good condition, and of constructing any others which may be needed, and more than this share it ought not under any circumstances to be asked to pay. The cost of keeping up communication between the counties of Suffolk and Middlesex, by way of Charlestown, should be equitably divided among the counties and cities interested therein, and there ought to be no difficulty in making the division, nor hesitancy in the payment by the parties, each of its proper share. (2.) Again, it has been suggested that it may be convenient to obtain water from the Mystic Works for the northern part of our city. But the supply from the Cochituate and from Sudbury river, as has been seen, promises to be ample for all the wants of the peninsula, and if for any reason it should be desirable to furnish the northern wards with water from the Mystic, an arrangement for doing so could probably be made with the Charlestown Water Board, which is now supplying East Boston. (3.)

It is further urged that as the freight termini of some of our leading railroad lines, and particularly of those connecting with the Hoosac Tunnel, will be situated in Charlestown, that city should be annexed to Boston, so that these termini may be included within the metropolitan limits. To this it may be replied that it cannot be shown that it will make the slightest difference, practically, whether the place where these freight-stations or wharves are, or are to be situated, is within or outside the limits of what is called Boston. There is no evidence that the annexation of Charlestown to Boston will induce the shipment of an additional ton of merchandise by these lines, or that it will secure the slightest reduction in the rates of freight charged upon them. The Erie and the Pennsylvania railroads have all their termini opposite New York, in New Jersey, not only in another municipality, but in another State; yet it has never been claimed that the commerce of the metropolis has suffered in any way from the circumstance. The Cunard and White Star steam-vessels also stop on the Jersey shore, and it does not appear that these ships have ever found themselves at a disadvantage on this account, as compared with the ocean steam lines which come directly to the city wharves. Boston and Charlestown constitute one port under both federal and State laws, and it will make little difference to any steam lines coming hither, or to our merchants, whether the wharves at which they lie are included within the municipality of Boston or not.

The undersigned would not be understood as intimating that the time may not come when it will be desirable to unite Charlestown with Boston; but however it may be with regard to Charlestown, it is not believed that the immediate annexation of that city is demanded by the best interests of Boston, nor is it judged to be expedient at the present time to extend the municipal limits beyond Charles river.

In preparing this paper, some thought has been given to what is called the metropolitan system of government for large cities, which places all matters of mere local concern under the control of districts or parishes, and entrusts to Boards and Commissions the management of all large questions. London is thus governed, and a brief reference seems proper to this great city and to the composite character of its government.

London proper covers only seven hundred and twenty-five acres, and contains a population about equal to that of the municipality of Boston. It lies wholly on the north of the Thames, and is divided into one hundred and eight parishes, ninety-seven being "within" and eleven "without the walls." It is also divided into twenty-six wards, all but two of which are within the limits of the old city walls. Each ward elects its own alderman, who serves during life, and members of the common council, and from among the aldermen the Lord Mayor is chosen annually, almost invariably the senior in office being taken. London, as a metropolis, includes the city proper and much more. In its most limited sense, it takes in the cities of London and Westminster, and the parliamentary boroughs of the Tower Hamlets, Finsbury, Marylebone, Lambeth and Southwark; but the metropolitan district comprised within the bills of mortality includes, with the cities and boroughs just named, other integral parts of London, like Chelsea, Brompton and Kensington, and the suburbs, such as Greenwich, Wandsworth, Hammersmith, Putney, etc. In this view, the area of the metropolis is more than seventy-eight thousand acres, and embraces one hundred and eighty-six parishes, and the population is upwards of three millions. London has thirteen police courts, of which eleven are under the superintendence of a Cabinet Minister, the Home Secretary, and two under that of the city corporation. There is a metropolitan police, the chief of which is appointed by the Home Secretary, and a smaller force of five or six hundred men in the city proper, under the authority of the city corporation or government. There are City Commissioners of Sewers, while the superintendence of the sewers and the gradual extension of a proper system of drainage to every other part of the metropolis has been entrusted to the New Metropolitan Board of Works, established in 1855. Except at the pumps and drinking fountains, water is supplied by incorporated companies.

The streets are lighted and kept in order by the parishes. London returns sixteen members to the House of Commons. of whom four sit for the city, two for Westminster and two for each of the boroughs.

It is interesting to bear in mind that popular government in England, and consequently in the United States, had its origin in the parish and in the municipality. An historian of London says: "When municipal government in England was in its freest, most energetic and most flourishing condition, parliaments, in any just sense of the term, as applicable to their existing constitution and powers, were unknown. The central authority was built upon the broad basis of a free municipal organization. Authority over that part of the old city lying beyond the walls was acquired by successive grants of jurisdiction."

The growth of London still continues, and at a remarkably rapid rate. "During the past ten years," says Colonel Henderson, in his last annual report on the Metropolitan Police, "there were built in the Metropolitan police district, 149,905 houses." An unpretentious statement, but it means that in those ten years there were *added* to London more than twice as many houses as there are in Liverpool, more than six times as many as there are in Dublin or Bristol; more houses by far than there are people in such capitals as Dresden and Stockholm. To illustrate the increase in another way, we are told that "the additional length of streets placed in charge of the police in the same period was 635 miles, equal to the distance from London to Inverness, and 40 miles beyond," and these streets, be it remembered, were more or less closely lined with new houses!

Paris has a circumference of fourteen and a half miles, and an area of eight thousand seven hundred and ten acres. It is divided into twelve *arrondissements*, each of which is subdivided into four quarters. Each *arrondissement* has a separate municipality, presided over by a mayor and two deputy mayors. The Prefect of the Seine is the chief municipal authority of the French capital, and the position is one of great responsibility.

Perhaps the metropolitan form of government might, in some particulars, be adopted to advantage in and about Boston. For the territory between the Charles, the Neponset, and Mother brook, an absolute municipal unity seems desirable.

It might be well to establish a metropolitan Board of Public Works, to superintend and regulate all matters pertaining to drainage and sewerage in Boston and the suburbs, and especially for the protection of the river Charles; or these duties might be performed by a Superintendent, under the direction of the State Board of Health. It is worthy of consideration, further, whether the powers and duties of the Board of Health recently organized for the city cannot be advantageously extended so that a metropolitan scope may be imparted to it, instead of the strictly municipal sphere of action to which the Board is now restricted. The cities and towns in the metropolitan district, which is called Boston, have much in common in reference to all matters of health, and these matters should be regulated in the interest and for the benefit jointly of all of them.

There can be no further question about the future of Boston. Its position as a great commercial and manufacturing city is assured. It is only necessary that improvements now in progress shall be promptly completed; that the enterprise of recent years, and of the present time, shall continue to be displayed; and that the possibilities of the city for enlargement shall be steadily borne in mind by its people, and be acted upon by them. All legislation relating to the city should be in harmony with the prospective development which lies before it; and all local plans should be laid out with breadth of view, and with confidence of expectation. Especially, should the form and character and scope of its municipal government be such as shall efficiently protect its interests, faithfully foster its growth, and worthily maintain its reputation for solidity and integrity, among the sisterhood of cities in the American Union.

Respectfully submitted,

HAMILTON A. HILL.

BOSTON, April 28th, 1873.

City Document.—No. 106.

CITY OF BOSTON.

MINORITY REPORT

OF THE

COMMITTEE

ON THE

Reorganization of the Fire Department.

1873.

IN COMMON COUNCIL, Sept. 4, 1873.

Laid on the table and ordered to be printed.

Attest: W. P. GREGG,
Clerk of the Common Council.

CITY OF BOSTON.

In Common Council, Sept. 4, 1873.

Minority Report of the Committee on the reorganization of the Fire Department.

REPORT.

It would be an easy thing for the members of the committee to avail themselves of the character and number of the petitioners to grant all that is asked, and thus throw upon the petitioners the entire responsibility.

It would also be an easy thing to say, "Let us get rid of this most difficult subject, by recommending the appointment of commissioners. The care of the safety of the city will then be in their hands, and whatever errors they may make cannot be charged against us."

The undersigned do not think such action the discharge of their duty.

Petitions are addressed to the sound discretion of the committee and City Council.

They do not justify neglect, or careless consideration, nor can they justify a yielding to their requests, unless after careful consideration our own convictions demand it. The petitioners would have a right to say to the government, "It is true we asked what you have granted, but that was without investigation, and we asked, knowing it was your duty to investigate; we took the usual and proper course to bring the subject before you; we never intended to relieve you from your duty, and if you failed to consider our requests and to refuse them, if not wise ones, you neglected your sworn obligations."

While we know that the thousands who signed the petition could not have examined the details embraced in it, we take it as evidence, if any were wanted, of the deep feeling of insecurity and apprehension of danger pervading the entire community.

Perhaps the readiest relief from their fears would be found in prompt radical change.

The true course, however, is to endeavor, from the mass of information accumulated, to adopt measures for the permanent security of the city, rather than for the temporary alleviation of present fears.

These fears have had since the great fire other expressions than the petitions in question.

At one time the cry was, that the Chief Engineer did not have power enough, and the Legislature was called upon to give him absolute control over the destruction of buildings without requiring him to consult with two other fire-wards, though the lesson of the fire taught no such necessity; and the result on that occasion would have been the same under either plan, as the Chief authorized all that was done. Again, the Legislature was called upon to give the right of way to engines; when the time has never been known when every citizen did not get out of their way as quickly as possible.

Then it was required that the engine-houses should be built by the Fire Department; as if the mere hands which erected buildings would have an effect upon fires, though the buildings have always been erected where the Fire Department required.

The same claim was made with reference to the Fire-Alarm Telegraph, though it has been admirably managed.

It were idle to enumerate all the changes suggested. Most of them pointed to a concentration of power and responsibility in the Chief Engineer; that is, to a concentration of power and responsibility. The present petition points rather to a division of power and responsibility; it proposes to add three persons to attend fires, and control the management of them. For having the power to remove the Chief Engineer they could control his action.

This is certainly a "dilution" of responsibility, if "dilution" means division. And thus those who favor the appointment of a commission with full power, do so believing they are concentrating power into one head, as is done in military affairs, to which a contest with fire is likened, when in truth they are dividing among four what now belongs to one.

The excuse for this course is, that the City Council "can resume at will its power" at any time, if the experiment proves a failure.

If we appoint a commission, we appoint it to adopt certain measures.

The majority tell us the things they want done; they desire to appoint a commission to do them.

Will the commissioners do these things? We don't know. If we are agreed as to what should be done, why not do the things we are agreed ought to be done? And then we shall be sure they are done, and done quickly and cheaply. Why put an additional expense of from fifteen to thirty thousand dollars per annum upon our tax-payers, when by a little extra labor we can save it all, and get exactly what we are agreed we want; certainly what we are asked to appoint commissioners to do?

If we "resume" our powers, after the failure of commissioners, we shall then have the duty to perform we ought to perform now.

In one of "Transcript" articles, on the Garden and Farm, is found the following: —

"Two boys, John and Will, were employed by a gentleman to keep the paths of his garden weeded.

"John contented himself with taking off the top of the weeds. He soon cried, 'I have cleared my path;' and having swept away the leaves went off to play.

"Will was much longer at work, for he stopped to take up all the weeds by the roots, and he was well tired when he went home.

"But the rain came down in the night and all the next day, and when the boys' master went a few days after to look at the two paths, John's wanted weeding as much as at first; while Willie's was clear, and only needed a few turns of the roller to make it quite neat. So John went back to do his work properly; and very tired he would have been had not Will good-naturedly helped him to finish his task.

"Only thorough work is worth doing. Faults only half uprooted will appear again and again, and we shall almost despair of curing them. Will you remember this?"

We think it better to pluck from the Fire Department all weeds by the roots, and do all necessary pruning, rather than devolve that duty into unknown hands, who may do it or may not do it.

As importance has been attached to the numbers of the petitioners, we desire, in addition to what we have already said, to call attention to the ease with which people will sign petitions circulated, as we understand these were by hired canvassers, without carefully considering their contents, and without any knowledge of the subject.

Even Mr. William B. Spooner, one of our citizens most esteemed for his intelligence and zeal for the public welfare, did not know that the Fire Department of our city was managed by a Board of Engineers of skill and experience; and, doubtless, spoke the general belief when he said, in answer to a question as to his impression of the management of the department, "I suppose there is a committee of the City Government; but I suppose the Chief Engineer has the control during fires, certainly."

From Mr. Spooner's testimony again: —

"*Q.* Can you tell us, if a Board of three or five commissioners could be selected, in what way they could govern and control the Fire Department any better than a strong Board of Engineers?

"*A.* I should think that would be a commission; would it not?

"*Q.* We have such a Board in existence now; have we not?

"*A.* I have never heard much of them. I do not know how that is, but I want some independent men; men who do not care for the salary; men who have an interest in the city; men of public spirit; men of independence, and known character; who will set to work and look this matter up, and think it out, and say what ought to be done. I want somebody to tell me; I want somebody whose business it shall be to look the matter up."

We cite this testimony, because it expresses, in the strongest and clearest language, the sentiment that favors the appointment of a commission. And what, then, is the story of the petitioners? It is this: "We don't know how the Fire Department is managed; we have an idea that it is managed by some committee of the city government, which is ever changing. These great fires make us feel that all is not right, and we want somebody to tell us what ought to be done."

This, in the opinion of the undersigned, expresses the real sentiment of the petitioners.

They do not want a "permanent" commission, a commission "independent" of control, responsible to nobody. Some say "they want somebody that they can hold responsible," and would have us appoint a commission so independent as to be responsible to nobody. What do they mean by having persons whom they can hold "responsible"? They do not intend to indict and imprison them if they fail to put out fires. They do not intend to turn them out of office, because they are to hold for long terms, and thus be independent. They mean to have somebody whom they can scold and talk about. Have they not that already? and have they not exercised this privilege, and are we not endeavoring to comply with their demands, as they ought to be, by endeavoring to cure every evil we can discover in the department? The objections to a commission are: —

First. It is unnecessary. We already have something like a commission in the Board of Engineers. They have such full control of the department that the committee on the department meets but once a month.

Second. The expense would be inordinate for the duties performed. All the executive duties of the department would be done by the engineers, leaving no necessity for the expense of a commission.

Third. The commission, if independent, and of the powers asked for by the majority of the committee, having the complete control of five hundred voters, and all their influence, would be a political power, capable of controlling almost any municipal election in the city of Boston. The appointment of a commission, therefore, would not take the department out of politics.

Fourth. Such a commission, independent, having absolute control of the large expenditures of the department, would be likely to become corrupt, and we might have a repetition of the frauds which have so recently disgraced New York. Whatever may be said of the Committee of the Fire Department, it has never been charged with corruption.

It has been a favorite method of reasoning on this subject to refer to the Water Board, and the Board of Health, as examples of the successful workings of Boards.

It must be remembered, that the Water Board has always been composed of gentlemen who could not be *hired* for any sum the city would pay; and when Mayor Gaston applied to a gentleman to take the chairmanship of the Board of Health, he replied, "If the office were without pay I would undertake it."

As to the present Board of Health, however estimable the gentlemen may be, and we hold them in much esteem, it is a question whether they have done anything that would not have been done by the Board of Aldermen, except the seizing for their purposes of the Roxbury Almshouse and taking patients from the other hospital to place in it.

They were appointed at a time when, owing to the immense amount of vaccination that had been done by direction of the Board of Aldermen, the disease was diminishing.

The new Board continued the same policy, and the disease abated, and well it might, as the whole community became protected by vaccination. The citizens will find, when the account is rendered by the new Board of Health, such an exceedingly expensive method of dealing with that department that they cannot afford to have all our departments managed in the same way.

If a commission was to be established for anything, it would be fitter far to apply it to the Department of Survey and Inspection of Buildings, — a department not calling for the expenditure of half a million of money, nor giving control over half a thousand voters, but requiring constant supervision, a duty that commissioners could personally discharge.

This would be striking at the root of the evil, and should meet the views of the majority of the committee, who say: "Until the manner of building American cities shall be reformed altogether, we their inhabitants cannot too soon realize that we are living, not in a state of peace, but of war, declared against us for good cause, by a relentless and stubborn enemy." In view of their danger, however, the undersigned deprecate the insidious inroads of permanent commissioners, for the discharge of any of the duties devolving upon the City Council.

Recurring to the present method of electing the Chief Engineer, we would, agreeing with the views of the majority of the committee; instead of devolving the duty upon a commission, apply a direct remedy, and provide that he be nominated by the Mayor, and be confirmed by the City Council. This is also in accordance with the recommendation of the learned commissioners appointed to inquire into the management of the great fire. The Chief Engineer is purely an executive officer, and the Chief Executive of the city ought to take the responsibility of his nomination, and if he finds a superior candidate, the City Council would readily supply the required salary. It will be remembered that, at the great fire, the citizens involuntary turned to their excellent Mayor for relief, though he had no legal authority to act, and though he had no part in the appointment of the executive officer of the department, who alone had authority to act.

This would be a concentration of responsibility, and in accordance with our system of government, national, State and municipal.

There has never been, to our knowledge, any difficulty in the manner of electing the Assistant Engineers, and no fault has been found with them as persons of skill in the department, or as persons of respectability and substance. Besides, permitting them to be chosen as at present would avoid placing the political power, resulting from the direct control of so many men, in the hands of one person, and those now living in separate districts are best known to the members of the government from their districts.

Another objection to the present system is that the members of the companies choose their foreman, which is claimed to be injurious to discipline.

Though not much fault has been found with the discipline of the department, — they always responding to every call with an alacrity and zeal which called from the commissioners appointed to examine into the great fire, great praise, — we would change this and provide that all the officers and members of companies be nominated by the Board of Engineers to the Board of Aldermen, and be appointed by said Board.

We now come to another change which we recommend. The majority of the committee say, "The difference of opinion is merely upon the question whether the desired reform can be effected, and the department brought to, and kept in, a state of excellence which will enable us to court comparison with those of other cities, under *joint* committees of the City Council and the Board of Engineers; or whether a permanent commission should be created to whom the whole authority and responsibility in the matter should be delegated." The committee doubtless had in mind the testimony of Mr. Avery Plumer, who, after stating that he had been chairman of the Committee on the Fire Department, said: "I had some six months' experience there, sir, and I came to the conviction at that time, and subsequent developments from time to time have only tended to strengthen that conviction, that the Fire Department should be placed in the hands of an individual or commission, or, at least, that the joint committee should be abolished, and it should be placed in the hands of the Board of Aldermen, for the reason that you would thereby narrow the responsibility, and the work would be more efficiently performed and with much less expense in my judgment, than by the large Board which now manages the department. I think that must be obvious to every gentleman."

Here is a gentleman called to testify in favor of a commission, and, having been chairman of the fire committee, he knows more about it than all the rest, and his complaint is of the joint committee; and he says that the purpose would be subserved by the department being placed in the hands of a committee of the Board of Aldermen.

The undersigned recommend the abolishment of the joint standing committee, and the placing of the department under the control of the Board of Aldermen. They are satisfied that every committee of the Board of Aldermen will be more efficient as a general thing than any hired commissioner. For instance, no member of the present Board of Aldermen could be hired for any service which would take his whole time, for any sum the city would pay, or ought to pay. They are larger men than can be obtained for pay. But it is said they have not time to attend to it. The reply is, that almost without exception they attend to their duties with singular zeal and fidelity. The public demands, and generally obtains, a high class of men for aldermen; and then demands and secures their best service in preference to the attention to their private affairs.

A majority of the aldermen of this committee are gentlemen of leisure, and not only have time to attend to their duties, but do attend to them with fidelity.

It is true that commissioners might show the same energy for a short time, as a new broom sweeps clean, but commissioners afterwards show little zeal except to protect themselves, and keep themselves in office. They are not looked after as other public servants are, and become obstinate and indifferent to the public wants. A notable instance of this has lately occurred. With regard to the filling of the South Boston Flats,— the only important thing they have had to deal with for years,— the Harbor Commissioners were not even called together to meet the committee of the city, one of their number being entrusted with the management of the whole matter.

The consequence is an immense expenditure of money, and retarding the occupation of the great bulk of the flats for many years; the one entrusted with the business actually objects to the city's making improvements that would advance the value of the flats and expedite their occupation.

Another notorious instance is, that the Board of State Charities, because it brought money through their hands, prevented for a long time, and fought gallantly to the last, against the repeal of the act, levying head-money on immigrants. It was, however, at last, by a close vote, repealed, and immediately, additional steamships steamed into our harbor.

But the majority say, if the commission is a failure, we can resume our powers. This is a delusion and a snare. Give three commissioners the appointment and control of five hundred men, and the expenditure of five hundred thousand dollars, and it would be found that the power was too great to be resumed. It would be the importation from our sister city of an institution which has been the cause of all her evils, and which we don't like to copy. As an illustration of the political effects of commissions, we call attention to the following article in the Boston Daily Advertiser: —

"THE CAMPAIGN IN THE DISTRICT OF COLUMBIA.

"WASHINGTON, D. C., Aug. 24. — The local political campaign this fall promises to be interesting in consequence of the reported determination of the Board of Public Works to prevent the re-election of every member of the house of delegates who aided last spring in the defeat of Mr. Shepherd, brother of the vice-president of the Board, for the position of speaker of the present house. Two districts are already in open revolt against this movement, and in one the Board is supporting one of the earliest and most persistent opponents in order to defeat the re-election of the present delegate. In the eastern part of the city much dissatisfaction exists, because the market-house, practically completed for five months, is not yet opened, the delay compelling all business to be done at the house of the Central Market Company, in which Vice-President Shepherd is a large stockholder. The expediency of an extra session of the Legislature is now being discussed, in order that the lately-revised code of statutes of the district may have its second formal reading, — a proceeding which will occupy nearly a week."

We have heard some persons say all the business of Boston should be done by commissions. Let us suppose that to be the case, and where would we land? Instead of the people having the power in their own hands, instead of their meeting when not satisfied with the management of municipal affairs and appointing a citizen's committee, irrespective of political ties, and choosing the men they can trust with all their interests, — we say, instead of thus having the management of their own affairs, they would find the fire commission, with its five hundred voters, and five hundred thousand dollars; the Board of Health, if entrusted with all the power of the department, with four hundred men, and five hundred thousand dollars; the paving commissioners, with five hundred men and a million of money; the police commissioners, with six hundred men; the public buildings and other departments, with their immense expenditures to contend with, and the citizens' committee, and the citizens themselves, would find themselves utterly powerless to correct abuses.

If the attempt were made, they would find these commissioners taking alarm, combining together, and with the immense patronage in their hands, almost irresistible, and only to be overcome by a convulsion, similar to the one in New York, which so recently startled the whole country.

This is no fancy sketch. It is what has always been done and is now being done in Washington, and is the natural result of such a system.

Let it not be forgotten that, notwithstanding the discovery of the immense frauds in New York, no one has been convicted of any offence, and it is yet undecided who will be the victims in the end.

Our city, thus far, has borne an unblemished character, and her credit has commanded money at the lowest rates, on both sides of the Atlantic. This has been because her learned men, her merchant princes, and her humblest citizens, were left, by the charter written by the late Chief Justice Shaw, untrammelled in the management of her municipal affairs. If the management was too lavish, they met in council and changed their public servants, and if too parsimonious (for these two offences have been the only crimes charged down to this day), the same fate awaited them. Let us not change our policy in this respect, but leave the same power in the hands of the people they had when we were sent here. The rumor that the commissioners, or some of them, are already selected, and that the petitions were circulated by hired employés, in the interest of the would-be commissioners, also cautions us not to be too hasty in creating so unnecessary a political power.

As a part of this political design, we would call attention to the fact that up to the 12th of June last, the law provided that the "appointment of engine men, hose men, and hook-and-ladder men shall be made by the mayor and aldermen exclusively." All other powers could be carried into effect by the said city government, "in any manner which they may prescribe, and through the agency of any persons, or any Board or Boards, to whom they may delegate the same."

Now, the persons managing this great change, not content when it should be successful, that the commissioners should appoint the Chief and Assistant Engineer, and expend half a million of money annually, and receive large salaries for doing so; but, anxious for the political power the control of many men would give them, got the law first above quoted amended by an act, finally approved June 12, 1873, by adding after the word "exclusively" these words: "unless the said City Council shall by ordinance otherwise provide for their appointment;" and the majority report does provide for the appointment by the commissioners.

The old provision was an important one. It prevented so large a political power getting into the hands of any Board or Boards. The amendment which abolished it was not asked for by the city. Its Committee on Legislative Affairs knew nothing about it, except the chairman, and he does not know who proposed it; but, thinking it unimportant, did not acquaint the committee with it. It will be seen at a glance that the amendment was the result of careful study and cunning design. Even the majority of the committee do not expect to reap any immediate benefit from the course they recommend; for they say, "That the appointment of a commission will act as an immediate remedy for all the faults and deficiencies of our present system, we do not claim; men of the desired abilities and qualifications may not be immediately found."

Our belief is that what of good a commission could do would be in the early stages of its existence, and all after that would be of evil; and, if there is no immediate benefit, then there would be none whatever.

The comparison between car-conductors and commissioners is a good one, as illustrating that in all walks of life we cannot resist too strong temptations.

We also agree with the opinion contained in the above quotation, that success depends upon the men employed, and not upon the name of the office they hold.

The successful contest with fire depends upon the Chief Engineer and his assistants.

The efficiency of the London Fire Brigade is due to its chief officer, Eyre M. Shaw. No diluted commission could make good his place.

The Chicago Fire Department had been managed by a commission for five years prior to Chicago's great fire. We might, then, have said "Down with commissions, and submit to the control of a department of firemen like ours." Then came our own great fire, and it proved that a mere system of government does not give safety or efficiency.

We have now one Babcock engine and one Extinguisher wagon. The value of these small engines in the early stages of fires is conceded. That being so, it is idle to expect them to do much good when confined to so few a number of vehicles. They can be rarely at fires as early as the more numerous large steam engines, and to have a great number of extinguisher wagons would increase the expense of the department beyond endurance. We, therefore, recommend that small hand engines, or Johnson pumps, and suitable buckets, be carried on each engine, hose carriage, and hook-and-ladder carriage, and that a certain number of such pumps be placed in each police station, and that one or more policemen with hand engines at each alarm start for the fire from the police station nearest the fire.

We also recommend that hose similar to those on the stand-pipe in the City Hall, with couplings fitting our hydrants, and with stop-valves on the nozzles, be placed in each police station, and that one or more policemen proceed with the same to each fire from the station nearest the fire. We also recommend that hose similar to those on the stand-pipes in the City Hall, in addition to the heavier ones, be carried on each hose carriage, so that it can be easily carried into buildings by a few men.

The adoption of these recommendations will be a great stride towards the preventive system, which Mr. Bird proves to be the best one, and which can, as its efficacy becomes proven, be more generally adopted.

These small engines will not only prevent many conflagrations, but will also prevent much damage from water. At present an immense amount of damage is caused by the great and useless quantity of water used to put out little fires. While the memory of the great fire is fresh upon us, we are apt to think only of deluges of water. But to be prepared to stop a small fire only by a great engine and a great amount of water, is to make it certain that a small fire shall always do a large amount of damage, and in the long run our insurance companies suffer enormously from this cause, even if we leave out the great fires that would be stayed by the prompt use of small engines.

Eyre M. Shaw, chief officer of the London Fire Brigade, in his report for 1870, says, "The quantity of water used for extinguishing fires in the metropolis during the year has been 11,161,446 gallons; in round numbers a little more than 11.000,000 of gallons, or about 50,000 tons, — a most insignificant quantity for the work done.

"This may have been an exceptional year, and, consequently, it may not be well to base any definite conclusions on the matter; but, in a professional point of view, the fact referred to is especially worthy of being recorded, as evidence of the extreme care used by the brigade to reduce the unavoidable item of damage by water to the lowest possible point consistent with the certainty of extinguishing fires. Assuming the annual supply of the metropolis to be 34,000 million gallons, it will be seen that the total quantity used for fires during the year has been less than one gallon for every 3,000 supplied. Even in the heaviest years the water required for extinguishing fires bears a very small proportion to the total quantity; the really important object is to obtain it with quickness and certainty, which can be effected only by means of a constant high-pressure service."

The last clause quoted, contains the whole wisdom in a nut-shell.

We must now adopt the best appliances we can to obtain this result, namely, to place water on fires with "quickness and certainty."

In our city water can be obtained at all times, and hand engines in skilful hands, sufficiently numerous to be early at fires, and a supply of hose of a size easily carried and handled, will probably best attain that end with our present water supply.

But we should never forget the last words we have quoted; namely, that this result "can be effected only by means of a constant high-pressure service."

This great remedy is so complete in the hands of an efficient force, with easily handled hose, that we desire to enforce it by quoting another sentence from the same report: —

"I presume that London will not submit much longer to the inconveniences and risks of intermittent water supply, and I confidently anticipate, that when constant high-pressure services have been established all over the metropolis, the quantity of water used in extinguishing fires will be still further reduced, for it must be remembered that in many cases a single gallon at an early stage is more effective than a million gallons half-an-hour later."

We have been informed that the Fire Department of Montreal consists of a few hose carriages and a few men, the high-service being sufficient to carry the water wherever wanted. Also, that in our sister City of Providence, the engines are rarely used. They are taken to the fires, it is true; but usually are returned without being used, the pressure from the hydrants being sufficient. We have heard that in one instance twenty-four streams were thrown at the same time over five-story buildings.

The Water Department is already in a Board, and we recommend that high-service be secured for every part of the city; when the expenses of the Fire Department will be greatly reduced, and its efficiency greatly increased, and the losses by water lessened.

The committee, having decided by a large majority in favor of a commission, determined that it was unnecessary to avail themselves of the privilege given by the City Council to visit other cities in quest of information.

The undersigned, however, impressed with the importance of the subject submitted to them, and anxious to obtain all he information necessary without saddling the city with the greater burthen of a commission, sought for it elsewhere. Their investigations were rewarded when they had examined "Birdsill Holly's system of water supply and fire protection."

This they found in operation in Lockport, New York, in the works of the Holly Manufacturing Company, and spent much time in studying the system, its mechanism, and mode of operation. The peculiarity of the system is that the engine pumps directly into the mains, without the necessity for a reservoir or stand-pipe of any kind, and the engine, having been set to supply water at a given pressure, will continue to keep up that pressure under all circumstances. If much water is drawn, much will be supplied; if little is drawn, little will be supplied. It was certainly a pleasant sight to see the ponderous engine working, now faster, now slower, and to see that its speed was regulated by a little mechanism which caused the engine to go faster or slower as the pressure in the pipes was greater or less. The undersigned are convinced, that the cost of these Holly pumps would not exceed the cost of the pumps for pumping water into our stand-pipes and reservoirs, and the cost of the reservoirs and stand-pipes for high-service could be wholly saved. The cost of the changes in the pipes of the city to meet the wants of the new system cannot of course be ascertained without a careful examination. This system of works can be adopted to supplement and increase the pressure in all the pipes in the city; or it can be applied to sections of the city; or it can be so arranged that the increased pressure can be applied to any district where the pressure is required for fire purposes; or it may be used to furnish an independent supply of salt water from the docks for fire purposes. The undersigned were so much pleased by the simplicity of this system of works and their adaptability to meet every requirement, that they recommend the passage of the order herewith presented to secure its examination by persons of skill, and their report concerning the same to the City Council. This course is extremely desirable in view of the great expenses now being incurred, and foreseen as necessary for our future wants.

We ought not to omit here to state that the Holly system has received the commendation of all the places which have adopted it, that many underwriters have extolled it, and that its adoption has been followed by the reduction of insurance rates. To furnish means to stop the losses from the frequent fires in Lockport, the place of Mr. Holly's residence, the fire engines proved inadequate. The result of the new system was so wonderful a success in putting out fires that it doesn't pay to have fires at all; and the attempts to have fires have diminished in numbers. Since the introduction of these works at Lockport, similar ones have been established in about fifty different Western cities and villages, and the demand for them continues to increase. For cities located on plains, this system supplied a great want, as they had no hills for reservoirs. For a city like Boston, its recommendations are its efficacy and its economy.

In the mean time we think the "quickness and certainty" of obtaining water is not to be attained by the universal introduction of the Lowry hydrant, but that its general use should give way to the lamp-post or Lockport hydrant, hereafter described.

The Lowry hydrant, placed on main pipes in the roadway, in our climate must be, many times, difficult to find, and its use cause much delay. Our winters are severe, and the removal of ice and snow, the opening of the hydrant, and placing the cap upon it at night, by the uncertain light of lanterns, cannot be conducive to "quickness and certainty." Their rapid introduction is owing to the great fire, and is a haste that will make waste. We admit there may be places where they should be located, but so far as we look for quickness, we must adopt some other.

The claim has been made that the street mains were insufficient to supply the Boston hydrants. It is difficult to see how the great capacity of the Lowry hydrant could remedy such defects. There may be instances where their use would be beneficial, in which cases they should be retained. The lamp-post hydrant is always accessible, and readily found, will give water with "quickness and certainty," and has its light always burning. It is strange that the combination of lamp-post and hydrant should be so late an invention.

We cannot leave this subject without alluding to a hydrant we saw in Lockport, New York, in a cylinder made of boiler plate iron, with a movable top. Inside this case was a hundred feet of hose, with a nozzle similar to those attached to the stand-pipes in the City Hall, except that there was a stop-valve near the nozzle. There was also in the case a wrench to turn on the water. We saw the cap removed, and one man ran with the hose, and when it was stretched to its utmost, another turned on the water. From the taking off of the cap, just twenty-five seconds elapsed before a stream of water one hundred feet high was thrown from the nozzle.

To this hydrant another hose or a steam-engine could have been attached, without interfering with the one we have mentioned.

These hydrants placed in reasonable proximity to each other, in connection with the Holly system, — or any other system of high-pressure service — would make it difficult for any fire to get such headway as to cause great damage, as the water could be put on the fire within a minute of its discovery.

There is another respect in which haste is likely to prove waste. We allude to the clamor for stand-pipes. We learned during our investigations, that at the Chicago fire the falling buildings broke the stand-pipes, and immediately large streams of water ran to waste, causing the engines to feel an immediate deficiency, and to become useless. Stand-pipes no doubt may be valuable to individual buildings, but their introduction into general use in the city, — would in the event of a large fire be disastrous. Certainly no stand-pipe should be allowed without a shut-off at a safe distance from the building.

The same precautions should, as far as possible, be taken with regard to all water supplies to large buildings.

We also recommend that the plumbing of all buildings should be subject to a rigid inspection, either under the Inspector of Buildings or the Water Board. During the coldest weather many persons are compelled to keep the water constantly running to prevent the freezing of water in the pipes. This evil is much greater than is generally supposed.

We find by the Auditor's report the following items, viz.: —

Repairs of engines, hose, and hook and ladder carriages, fuel, and extinguisher wagons, and pungs	$47,053.67
Fire hats and badges, including repairs	$2,365.75
Hose and hose pipes, and couplings, including repairs	$85,270.33

To those at all familiar with the department, it is well known that the struggles of the different contractors to obtain the work represented in the above items has a demoralizing effect upon the department. *Here is where political influence seems to exert itself.*

It would be much better if all the work that can be, should be done in a workshop owned and equipped by the city. Certainly all the first of the above items, and probably some of the others, could be. Of the good effect upon the department, as well as of the economy, of such a change, the undersigned are convinced. They, therefore, recommend the establishment of such a workshop, and the creation of an officer, to be styled "Superintendent of Construction and Repairs," to be nominated by the committee on the department, confirmed by the Board of Aldermen, and to hold his office subject to removal by the committee for cause.

This plan is not an experiment. It is already in successful operation in the Health Department, which department makes and repairs all its wagons, pungs, and harnesses, and shoes its own horses.

We were prepared to recommend a moderate increase in the permanently employed men of the department; but an examination of the Holly system has convinced us that its adoption will require a diminution of the force. This, in fact, has been the result in many instances where that system has been adopted.

The Holly system is one or more great engines, of greater power than any locomotive steam fire-engine, with its iron pipes already laid wherever wanted, and with steam always up ready for action.

Of course, reductions in the present service should be cautiously made. There should not be a hasty trusting to one security alone. One of the signers of this report witnessed the recent large fire in Quebec, from the time it might have been put out with a Johnson pump, to its close. The great loss was due wholly to defective water-works. The supply-pipe was broken in the bed of the river, and was permitted to remain so, as it still furnished a supply for domestic purposes. Of course the high-service which the works were intended to supply was not in existence, and having no engines, or other means of contending with the flames, the flames ran their course.

In order that the attention of the Fire Department shall not be distracted by other duties, we recommend that the Chief of Police delegate certain members of his department to attend fires, and when there take control of all members of the police present, prevent theft, prevent the populace from impeding the firemen in their work, and keep the roads clear.

We make no recommendation regarding districting the city, because we find it already judiciously districted by the Board of Engineers into eight districts.

The undersigned do not claim to have exhausted the subject committed to them. They present the result of all the investigation and thought they could give it in the time allowed them. They are ready to adopt other measures, if better ones can be suggested; and ask the co-operation of their fellows in the City Council to aid in improving this important department, without the expense and dangers of a commission.

They do not look upon the putting out of fires as a contest with some fiend, or mysterious and unknown power. Common sense should be applied to this department, as to all others. Fire will burn combustible substances, when it comes in contact with them. When fires occur water will put them out, if applied with "quickness and certainty." Vigilance, energy, and common sense will, with the means now in existence, almost invariably put them out without much damage.

For want of time the undersigned present this report as a report of progress, asking permission to present, at a subsequent meeting, an ordinance, in accordance with the recommendations of the report.

JAMES POWER,
BENJ. DEAN.

City Document.—No. 107.

CITY OF BOSTON.

RECOMMENDATIONS

OF THE

JOINT STANDING COMMITTEE

OF THE

FIRE DEPARTMENT.

In Common Council, Sept. 4, 1873.

Laid on the table, and ordered to be printed.

Attest: W. P. GREGG,
Clerk of the Common Council.

CITY OF BOSTON.

City Hall, Boston, Sept. 4, 1873.

To the Honorable City Council of the City of Boston: —

Gentlemen, — The Joint Standing Committee on Fire Department, after a careful examination of the system and management of Fire Departments in the leading cities of our Union as compared with that of our own, are thoroughly convinced that by the adoption of the within-named recommendations the Boston Fire Department would be as powerful in its armament and as thoroughly equipped as any fire department in the United States, and its members as intelligent and disciplined a body of men as can be found in any city.

Your committee present the following tables of expenditures of the different fire departments for your consideration: —

Years.	No. of Co's. in service.	No. of men in department.	Expense of department.	Expense per company.	Expense per man.
NEW YORK.					
1870	52	590	$1,006,212.87	$19,350.24	$1,705.44
1871	52	590	1,125,897.83	21,651.88	1,908.30
1872	52	590	1,050,195.38	20,196.06	1,779.99
PHILADELPHIA.					
1869	87	993	$114,798.50	$1,319.52	115.60 (vol.)
1871	27	329	400,000.00	14,814.81	1,215.80
1872	29	373	425,534.32	14,673.59	1,140.84
BALTIMORE.					
1869	10	114	$95,549.56	$9,554.95	$838.15
1870	10	123	105,789.53	10,578.95	860.07
1871	11	139	156,394.00	14,217.63	1,125.20
BOSTON.					
1870	38	466	$361,189.07	$9,504.97	$775.08
1871	38	466	331,169.45	8,714.98	710.66
1872	42	475	438,494.10	10.440.33	923.14

While your committee are slow to recommend any measure that will increase the burden of taxation, yet, in view of the fact that our dwelling-houses are giving place to warehouses and stores, making it impossible to obtain tenements for the members of the department in the central portion of the city, they believe that the extra expenditure for the maintenance of the department in this district will be cheerfully met by our citizens for carrying out the following recommendations: —

Namely, the organization of one steam fire-engine company and one hook-and-ladder company, to be located on Fort Hill, said companies to be permanently employed, and one engine company to be located in the vicinity of Mason street, as provided for by the City Council in the annual appropriation bill.

Your committee also recommend, in addition to the above engines and hook-and-ladder companies, that Engine Co's Nos. 4 (on Bulfinch street), and 7 (on East street), be reorganized so as to consist of twelve men each, as follows: —

Foreman, engineer of engine, fireman, two drivers, and seven hosemen, all of which to be permanently employed; also that Hose Co's Nos. 1 and 8 be transferred into engine companies as above, to take charge of Engines Nos. 24 and 25, and that Hook-and-Ladder Co. No. 8, located on Fort Hill, be composed of fifteen men, to be permanently employed and ranked as follows: foreman, assistant foreman, driver, and twelve ladder-men.

The department (of the city proper), as now organized, consists of seven steam fire-engines, five hose companies, two hook-and-ladder companies, and two extinguisher corps, with a membership of thirty-three men permanently employed, and one hundred forty-four members (who do duty only when an alarm of fire is sounded), at an annual expense for salaries of $81,692.50. The recent vote of the City Council, authorizing horse hose carriages to be run in connection with the several engines will increase the number of permanent men (in the city proper) to thirty-eight, and the expense for salaries to $87,167.50. By the adoption of the recommendations of your committee, the department (in the city proper) will consist of nine engines, three hose companies, three hook-and-ladder companies, and two extinguisher corps, with a force of ninety-five men permanently employed, and ninety-six members (to do duty only upon the sounding of an alarm of fire) at an expense for salaries of $101,926.25, being an increase of $14,759.75 annually. By the adoption of the above recommendations the city proper will have fourteen steam fire-engines, nine of which will be fully manned and equipped, and, in case of emergency, fourteen engines can be at work within the space of fifteen minutes; of this force there will be on duty constantly a patrol force of forty men. With the increased water supply which has been furnished by the Water Board, since the 16th of May (being sixty Lowry hydrants), with additions being made daily in this direction, the city will have a working force as strong as any other city on the continent.

Yet your committee, notwithstanding all this, fully concur in the opinion, that there should be placed in the mercantile section of our city an independent water supply for fire purposes, believing the same could be maintained with one-third of the expense it now costs for the present system of extinguishing fires, and give the City of Boston, in the above-named district, by the adoption of the Holly system, a power equal to one hundred fifty steam fire-engines, instead of fourteen, for each hydrant would be equal in power to any first-class steamer now in service.

For the committee,

L. R. CUTTER,
Chairman.

City Document. — *No.* 108.

CITY OF BOSTON.

REPORTS

OF

Committee on Public Institutions,

ON A SITE FOR THE

Home for the Poor.

1873.

In Board of Aldermen, Sept. 8, 1873.

Laid on the table and ordered to be printed.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Sept. 8, 1873.

The Joint Standing Committee on Public Institutions, to whom was referred so much of the Mayor's Inaugural Address as relates to a New Home for the Poor, being unable to agree upon a location, have instructed me to submit the accompanying reports.

The committee are unanimous in the opinion that suitable provision should be made, as early as practicable, for the care of our poor, apart from the penal and reformatory institutions, and upon a scale sufficient to meet the requirements of the city for the next half century at least. In 1870, the inmates of the several institutions at Deer Island numbered 1,004. At the present time the number is about 1,260. This is exclusive of those transferred during the past year to Rainsford Island.

In his report for 1870 the Superintendent stated that the almshouse department, the hospitals, and the dormitories, were crowded to such an extent as to interfere seriously with the health and comfort of the inmates. "That a new almshouse is required," he said, "is no longer a matter of doubt. It is an imperative necessity. Immediate steps should be taken towards accomplishing this end, in order that the poor of the City of Boston may not be so crowded and limited in their accommodations, and also that they may be entirely separated from the inmates of the House of Industry."

Since this statement was made, it will be observed that the number of inmates of the institutions on this island has increased over twenty-five per cent., while no substantial increase of accommodations has been afforded. The Inspectors of Prisons for the County of Suffolk have repeatedly called the attention of the City Government to the want of additional accommodations at this place.

In the last annual report of the Board of Directors for Public Institutions, it is stated that "the transfer of the adult male paupers to Rainsford Island, in October last, afforded partial relief to the overcrowded House of Industry, but the large increase in the number of commitments has already filled the space thus obtained; and the directors are satisfied that there can be no permanent relief until the entire main building is devoted to the House of Industry. This is not a sudden conviction, but has been for a long time considered."

The City Council of 1870 passed an order, just at the close of the year, which was approved by the then Mayor, appropriating $225,000 for the erection of a new almshouse at Deer Island; but, through an oversight, the Board of Directors were not authorized to proceed with the work. When the government of 1871 came to consider the matter, a large number of remonstrances, signed by the leading citizens of Boston, were presented against the establishment of a Home for the Poor on Deer Island. The committee to whom the subject was referred recommended that the Old Roxbury Almshouse (since used for a small-pox hospital) should be repaired and enlarged for the purpose, at expense of $75,000. The recommendation failed to be carried out, and no further action has been taken, except in providing temporary accommodations for a portion of the paupers at Rainsford Island. The appropriation made in 1870 is still available for such uses as the City Council may see fit to direct.

Upon the question of a new location your committee are evenly divided. Four members recommend the purchase of the lots of land known as the Whittredge and Seaverns estates on Neponset river, and within the limits of the City of Boston; and four members recommend the purchase of the Austin Farm, so called, situated in the town of West Roxbury, and on the line dividing that town from this city. The special advantages of the two locations are set forth in the accompanying reports.

Respectfully submitted,
CHARLES HULBERT,
Chairman.

SEAVERNS ESTATE.

In presenting their recommendation for the purchase of the Whittredge and Seaverns estates in Dorchester, the undersigned beg leave to state briefly the principal requisites which, in their opinion, should be possessed by any site which may be selected for a Home for the Poor.

In order to save the city from an annual charge of several thousand dollars, the location should be within the city limits, otherwise the property will be taxed to pay the expenses of another municipality.

It should be easily accessible from the central portion of the city, for the transportation of building materials and supplies, for visitation, and for the conveyance of inmates and attendants either by railroad or by water.

It should be on the main land, yet properly isolated, where it will not affect injuriously the property surrounding it, and where the future growth of the city will not require the removal hereafter of the institutions placed upon it.

The site should be pleasant, airy, sufficiently elevated to be easily drained, and well adapted from a sanitary point of view for the location of substantial structures to accommodate a large number of inmates.

A good supply of pure water should be easily obtainable.

In determining the quantity of land necessary for the purpose, regard should be had, of course, to the future growth of the city for a long period, and also to the fact that all land in excess of that which is necessary for the institutions will involve an annual expense for its care and embellishment.

The undersigned are satisfied, from the examination which they have given to this matter, that the quantity should not much exceed thirty acres.

All the requisites above named are possessed by the two estates situated on Neponset river in Dorchester, and containing about thirty-six acres of land. The site is elevated, airy, commanding a very fine and extended view of Boston harbor, Neponset river, and the surrounding country. The land can be easily drained, and, in addition to the supply of water on the premises, Cochituate water can be introduced at a slight expense by extending the pipes a few rods from their present terminus. The soil is excellent in quality, and under good cultivation. The quantity of land is not excessive; and nearly all of it is available without material outlay. The marsh-land does not exceed one acre in extent. This location is not likely to be in the way of the future growth of the city, and at the same time it is not more isolated than is required for the purpose.

The access by railroad is complete, as the tracks of the Milton Branch of the Old Colony Railroad are laid across the lower end of the land, and will furnish all the facilities for transportation which the city will ever require.

The communication by water is also admirable, as the land is bounded on one side by the Neponset river, and vessels of large draught can go up from the main harbor and discharge supplies of coal and building materials directly on the premises. There is a good wharf on land immediately adjoining, which can probably be hired for a moderate price, or a wharf, sufficient for the needs of the institution, can be built at a small expense on the land purchased.

The situation of this land, with reference to exposure and the cost of preparing it for the reception of the buildings which are to be erected thereon, is in every respect satisfactory. A good farmhouse and outbuildings are already located on the premises, and are included in the price named for the land.

The objections to the "Austin Farm" are these: —

It is beyond the city limits. It is not easily accessible either by railroad or by water; and building materials cannot be laid down there except at a considerably higher cost for transportation than at the Dorchester site.

The quantity of land is much greater than is needed for the purpose for which it is to be used, involving the city in unnecessary expense for its purchase and care. About one-fourth of the estate (twelve or fifteen acres) is low, wet, and unavailable, except for purposes of pasturage, — land not at all adapted to the needs of such an institution.

If it is proposed to secure a site *outside the city limits*, it can be easily obtained on the line of a railroad by going a little further in actual distance from the City Hall, and for one-fourth or one-third the sum asked for the Austin Farm. Such a site would be more readily accessible and would require less time and expense in furnishing supplies and personal transportation than the Austin Farm. The large expenditure which the purchase of this place involves, is, therefore, unwarranted, as there are other estates equally good as to the character of the grounds, and better located as to facilities for communication from the business portion of the city, which can be had at much less expense. It should be understood that, in selecting any site for an almshouse in another town, the statutes require that permission be first obtained from the inhabitants of that town.

The first cost of the estate in West Roxbury is $135,000. The cost of the two estates in Dorchester, containing about the same amount of *available* land, is $95,000.

In view of the foregoing facts the undersigned would respectfully recommend the passage of the accompanying orders.

CHARLES HULBERT,
L. R. CUTTER,
CHAS. A. BURDITT,
HARRISON LORING.

Ordered, That the Committee on Public Institutions be authorized to purchase, as a site for a Home for the Poor and a Home for Neglected Children, the estate late of Charles Seaverns, bounded in part by Marsh street, Granite street, and the Neponset river in Boston, containing eighteen and a half acres, more or less; also the lot of land adjoining the same on the easterly side, known as Cushing's hill, containing seventeen and a half acres, more or less; the price paid for said lots not to exceed six cents per square foot.

Ordered, That the Auditor of Accounts be authorized to transfer from the appropriation for a Home for the Poor at Deer Island the sum of $95,000, to be applied to the purchase of land for a Home for the Poor in Dorchester.

AUSTIN ESTATE.

The undersigned, members of the Committee on Public Institutions, would respectfully recommend the purchase of the estate known as the "Austin Farm," as the most suitable place on which to establish a New Home for the Poor.

This estate is about four and one-half miles from the City Hall. It is situated in West Roxbury, and is bounded on the east by the City of Boston. It lies between the Boston, Hartford and Erie R. R. and the Providence R. R., about five-eighths of a mile from the former, and one mile from the latter. It is distant about one hundred feet from Blue Hill avenue, one of the best avenues out of the city. It is bounded by four streets, namely, on the east by Back street in Boston; on the south by Morton street; on the west by Canterbury street; and on the north by a private way called Austin Terrace.

The estate contains about fifty acres, of which about twelve are meadow-land, the rest upland. The whole estate is surrounded by a stone wall, nearly two miles in length, built in the most substantial manner. This wall is nearly or quite three feet in thickness, and about four in height. It is laid in cement on a foundation at least three feet below the surface of the ground.

There are three ponds on the estate; the largest containing about two acres, the others about half an acre. The largest pond is supplied by a never-failing spring, is twenty feet deep in the centre, and is always full. It is estimated that at least two thousand tons of ice can be taken from the pond in winter, and throughout the year it will furnish an ample supply of water for at least five thousand persons. The three ponds are connected by a drain; consequently, when the large one is full it flows into the two smaller ones, and thence into a branch of the Stony Brook, which runs through the estate, and which will furnish the most complete system of covered sewerage.

There are at least one thousand forest-trees on the premises divided into groves or scattered about; also about one thousand fruit-trees of the choicest kinds, together with an abundance of smaller fruits. Near the centre of the estate there is a fine dwelling-house, containing nineteen rooms in good order; also a carriage-house, a barn, an ice-house, and other outbuildings usually found on a gentleman's estate. The views from the house can hardly be surpassed. The city and country can be seen for miles about. The whole property is in the highest state of cultivation; the crop of grass alone, after supplying the stock kept on the place, was sold at public auction last season, standing, for eleven hundred dollars. Good facilities are afforded for transportation by the Hartford and Erie R. R.

All the materials required for erecting new buildings can be shipped from the East, or from Quincy, delivered at the dock, and easily transported by cars to the grounds.

The objection which has been urged so strenuously against this estate, by the other members of this committee, on account of its location outside the city limits, is without any force, as the annexation of West Roxbury, during the present year, is almost a certainty. If the act for that purpose should, however, fail to be accepted in October, the next Legislature would, undoubtedly, pass an act annexing this estate, upon the request of the City Council.

The condition of the institutions at Deer Island calls for the promptest action in this matter. If the Austin Farm is purchased, there need be no delay in erecting the necessary buildings, as the grounds are already prepared for their reception. The buildings now standing upon the estate are available for immediate occupation. The estate in Dorchester will have to be improved before it is fitted for occupation, causing a good deal of delay and considerable expense. To bring that estate into an equally good condition with the Austin Farm would require an outlay of at least $50,000.

Its situation with reference to the adjoining property presents many objectionable features. It is very irregular in shape, and in order to lay out the grounds properly, and define the boundaries, other estates must be purchased. To secure communication by water it will be necessary to build a wharf on Neponset river, or buy the wharf property adjoining, covering two and one-half acres of land, for which fifteen cents per foot is asked.

It should be borne in mind that the Austin Farm contains fourteen more acres of land than the estate in Dorchester, and that the actual difference in the prices of the two estates is less than a quarter of a cent per foot. In order to accommodate the buildings required at present, and allow room for enlargement, from time to time, as the growth of the city will require, it would not be judicious to purchase an estate containing less than fifty acres. Every foot of the Austin Farm, except the small portion covered by the ponds, is available for the purposes of the institutions which are to be placed upon it. The number of square feet contained in the estate is 2,161,455.

The owners will convey to the city the lands with the buildings and other fixtures thereon for the round sum of $135,000 (something less than six and one-quarter cents per foot), and pay the taxes for the present year.

In view of these facts the undersigned believe that, although the first cost of the Austin Farm is somewhat larger than the Dorchester estate, it will in the end be found the most economical site for the city to purchase; and they would, therefore, recommend the passage of the accompanying orders.

JAMES POWER,
WASHINGTON L. PRESCOTT,
WM. G. THACHER,
HILLMAN B. BARNES.

Ordered, That the Committee on Public Institutions be authorized to purchase, as a site for a Home for the Poor, and a Home for Neglected Children, the lot of land known as the Austin Farm, bounded on the easterly side by Back street, between Boston and West Roxbury, on the southerly side by Morton street, on the westerly side by Canterbury street, and on the northerly side by Austin terrace, so called; containing fifty acres, more or less, the price paid therefor not to exceed the sum of $135,000.

Ordered, That the Auditor of Accounts be authorized to transfer from the Appropriation for a Home for the Poor at Deer Island the sum of $135,000, to be applied to the purchase of the Austin Farm as a Home for the Poor.

City Document. — *No.* 109.

CITY OF BOSTON.

ORDINANCE RECOMMENDED

BY THE

COMMITTEE

ON THE

Reorganization of the Fire Department.

1873.

In Common Council, September 11, 1873.

Submitted by the Minority of the Committee on the Reorganization of the Fire Department.

Laid on the table, and ordered to be printed.

Attest: W. P. GREGG.
Clerk of the Common Council.

CITY OF BOSTON.

In Common Council, September 11, 1873.

The undersigned minority of the Joint Standing Committee on the reorganization of the fire department, in addition to their former report, recommend the passage of the annexed ordinance.

JAMES POWER,
BENJ. DEAN.

AN ORDINANCE IN RELATION TO THE FIRE DEPARTMENT.

Section 1. The fire department shall consist of a chief engineer, fourteen assistant engineers, of whom two shall be residents of East Boston, and of as many foremen, enginemen, hosemen, and hook-and-ladder men, and other persons, who shall be divided into companies, as the number of engines and the number and quantity of other fire apparatus belonging to the city shall from time to time require.

Said department, except where other provisions are made therefor, shall be under the control of the Board of Aldermen.

Sect. 2. *The mayor shall annually, on the first Monday of February, nominate to the city council, and by the approval thereof, expressed by the concurrent vote of both branches, appoint a chief engineer and a superintendent of construction and repairs.* There shall be elected annually, on the first Monday in February, or within sixty days thereafter, by a concurrent vote of the two branches of the city council, fourteen assistant engineers, of whom two shall be residents of East Boston; they shall hold their office for one year from the first Monday of April in the year in which they are elected, and, unless sooner removed, until their successors shall be elected and qualified. They may be removed at the pleasure of the city council, and all vacancies for the unexpired term may be filled at any time. They shall receive such compensation as the city council may from time to time determine.

Sect. 3. On the first Monday of April, annually, the chief and assistant engineers shall meet and organize themselves as a board of engineers. The chief engineer shall preside at said meeting, and at all meetings of the board, when present; but in his absence the senior assistant engineer in service present shall preside; and their seniority in rank, and all questions relative thereto, shall be determined by the board of aldermen. The board of engineers may recommend to the city council some person to be elected secretary of said board, and the city council shall, on the first Monday of April, or within thirty days thereafter, by concurrent vote, elect a secretary, who shall hold his office for one year from the first Monday of May in the year in which he is elected, and, unless sooner removed, until his successor shall be elected and qualified. He may be removed, and a vacancy may be filled as provided for in the case of the engineers, in the second section of this ordinance. He shall receive such compensation as the city council may from time to time determine. He shall be sworn, and give bonds with surety for the faithful performance of his duty, in such sum as the board of aldermen may direct.

Sect. 4. The engineers shall, at such times as they may by their by-laws determine, hold such meetings as may be necessary for the prompt transaction of all business coming before them, and a majority of the whole board shall be necessary to constitute a quorum. They may make such rules and orders for their government as a board of engineers as they may see fit, subject to the approval of the *board of aldermen.* They shall be responsible for the discipline, good order, and proper conduct of the whole department, both officers and men, and for the care of all houses, engines, hose carriages, hook-and-ladder carriages, horses, furniture, and apparatus thereto belonging. They shall have the superintendence and control of all the engine and other houses used for the purposes of the fire department, and of all the horses, furniture, and apparatus thereto belonging, and of the engines and all other fire apparatus belonging to the city, and over the officers and members of the several companies attached to the fire department, and over all persons present at fires; and they may make such rules and regulations for the better government, discipline, and good order of the department, and for the extinguishment of fires, as they may from time to time think expedient; — such rules and regulations not being repugnant to the laws of this Commonwealth, nor to any ordinance of the city, and being subject to the approval of the *board of aldermen*, and to alteration or revocation by them at any time.

SECT. 5. The secretary to the board of engineers shall perform the ordinary duty of clerk to the board, and such other duties as *the board of aldermen*, or the chief engineer, may from time to time direct; and also such other duties as the board of engineers, by their rules and orders, to be approved by the *board of aldermen*, may from time to time determine. He shall keep an account of the appropriations made by the city council for the use of the fire department, and of the expenditures on account of the same; and shall compare his account monthly with the auditor's books, and see that the expenditures of the fire department do not at any time exceed the amount of the appropriations at its disposal. He shall also keep a separate account of the expenses of each engine, hose carriage, and hook-and-ladder carriage, and of the horses, furniture and apparatus thereto belonging, and all other incidental expenses; and shall present to the city council, in the annual report of the chief engineer, a full and detailed statement thereof.

Sect. 6. The said engineers, whenever a fire breaks out in the section of the city to which they are assigned for duty, shall immediately repair to the place of such fire, and carry with them a suitable staff or badge of their office; they shall take proper measures that the several engines and other apparatus be arranged in the most advantageous situations, and duly worked for the speedy and effectual extinguishment of the fire; they shall require and compel assistance from all persons, as well members of the fire department as others, in extinguishing the fire, pulling down or demolishing any house or building, if occasion require, in suppressing all tumults and disorders, removing furniture, goods, or other merchandise from any building on fire, or in danger thereof, and shall appoint stewards to secure the same. They shall also cause order to be preserved in going to, working at, or returning from fires, and at all other times when companies attached to the department are on duty. The assistant engineers shall report their absences from fires to the chief engineer at the regular monthly meetings of the board, with the reasons therefor, and he shall keep a record of the same, and, once in every three months, and oftener if required, make a report thereof, stating all the facts, to the city council. In the absence of the chief engineer, the secretary shall make said record and report.

Sect. 7. Whenever any fire occurs in either of the adjoining cities or towns, only such and so many of said engineers shall repair thither as may have been previously designated for such purpose by the chief engineer.

Sect. 8. The chief engineer shall have the sole command at fires over all other engineers, and all officers and members of the fire department, and all other persons who may be present at fires, and shall direct all proper measures for the extinguishment of fires, protection of property, preservation of order, and observance of the laws, ordinances and regulations respecting fires; and it shall be the duty of said chief engineer to examine into the condition of the engines and all other fire apparatus, and the houses connected therewith; and of the engine and other houses belonging to the city and used for the purposes of the fire department; and of the companies attached to the said department, as often as circumstances may render it expedient, or whenever directed so to do by the city council, or by the *board of aldermen*. Whenever the engines or other fire apparatus, used by the fire department, require alterations, additions or repairs, the chief engineer, under the direction of the *board of aldermen*, shall cause the same to be made. It shall also be the duty of the chief engineer to receive and transmit to the city council all returns of officers, members and fire apparatus made by the respective companies, as hereinafter prescribed, and all other communications relating to the affairs of the fire department; to keep fair and exact rolls of the respective companies, specifying the time of admission and discharge, and the age of each member. He shall also critically examine all the bills and accounts against the fire department, and certify, in writing, to the correctness of each item thereof before sending them to the auditor's office for payment. He shall, annually, in the month of January, and oftener if thereto requested, report to the city council an account prepared by the secretary of the board of engineers, as hereinbefore provided, of the condition of the engine-houses, engines, fire apparatus, and other property under his charge; of the incomes and expenditures of the fire department for the whole of the previous year, specifying particularly the expenditure on each engine, hose carriage, and hook and ladder carriage, and of the horses, furniture, and apparatus connected therewith, as required in section five of this ordinance, together with the names of the officers and members of the various companies; the number and location of the fire-alarm stations; the number of fires since his last report, the causes thereof, and the extent of damage, as near as can be ascertained; the general description of the buildings and property destroyed or injured since his last report, together with the names of the owners or occupants; the amount of insurance, if any; all accidents by fire which have happened within the city, with such other information or suggestions as may in his opinion be of general use, — the same to be published as the city council may direct. *A failure to make said report as above directed shall render said chief engineer ineligible to reappointment unless confirmed by a yea and nay vote, two-thirds voting therefor.*

Sect. 9. In case of the absence of the chief engineer, the engineer next in rank who may be present shall execute the duties of his office with full powers.

Sect. 10. The engineers shall report to the *board of aldermen* the name of every person, not a member of either of said companies, who may, contrary to law, refuse or neglect to obey any orders of any engineer, given at any fire.

Sect. 11. *The engineer in command at a fire shall have the power to adjudge upon the necessity of pulling down and demolishing buildings to prevent the spreading of fires, and have authority to pull them down and destroy them accordingly.*

Sect. 12. The engineers shall inquire for and examine into, all shops and other places where shavings or other such combustible materials are collected or deposited, and report at the regular monthly meeting of the board the condition in this respect of the district to which they are assigned; and whenever, in the opinion of any two of them, the same may endanger the security of the city from fires, they shall direct the tenant or occupant of said shops or other places to remove such shavings or other combustible materials; and in case of such tenant's or occupant's neglect or refusal so to do, they shall cause the same to be removed at the expense of such tenant or occupant, who shall, in addition, be liable to a penalty of not less than two, or more than fifty dollars for such neglect or refusal; and any person who shall obstruct the engineers, or any of them, in carrying out the provisions of this section, shall also be liable to a penalty of not less than two, nor more than fifty dollars. The said engineers shall also take cognizance of all buildings in the city in which any steam engine is used, and of all buildings in the city in process of erection or alteration, and make a record of such as in their judgment may from any cause be dangerous, and forthwith report the same to the board of aldermen. The said engineers shall also cause prosecution to be instituted in all cases of infraction of the laws relative to the erection of wooden buildings, or of any other laws or ordinances in relation to the fire department, or for the prevention of fire within the limits of the city.

SECT. 13. The power of making and establishing rules and regulations for the transportation and keeping of gunpowder within the City of Boston, and of granting of licenses for keeping and sale thereof in the city, according to the provisions of an act entitled "An act for further regulating the storage and safe-keeping, and transportation of gunpowder in the City of Boston;" and of any other act or acts on the same subject shall be exercised and performed by the chief and assistant engineers, and the power and duty of seizing any gunpowder kept or being within the city or harbor, contrary to the provisions of the said act or acts, shall be exercised and performed by the said engineers, or any of them; and in case of any seizure being made by any engineer other than the chief, he shall forthwith report the same to the chief engineer, and the chief engineer shall cause all gunpowder which may have been seized as aforesaid to be libelled and prosecuted in the manner prescribed in the said acts; and all other powers and duties granted and enjoined in and by the said act or acts shall be performed by the said chief or one of the assistant engineers.

Sect 14. All moneys received for fines, forfeitures, and penalties arising under this ordinance or the laws of this commonwealth, regulating the storage and transportation of gunpowder, or the erection of buildings within the City of Boston, or the prevention and extinguishment of fire, unless it is by such laws otherwise specially provided, shall be paid into the treasury of the city, to be applied in such way as is provided in the acts of this commonwealth.

Sect. 15. No person under twenty-one years of age, and no person who is not a legal voter in the City of Boston, shall be an officer or member of the fire department.

Sect. 16. Every officer and every member of the fire department shall sign the following agreement, to be deposited with the board of engineers: "I, A. B., having been appointed a member of the Boston fire department, hereby signify my agreement to abide by all the ordinances of the city council, and the rules and regulations of the *board of aldermen* and of the board of engineers relating thereto." And any officer or member who shall neglect or refuse to sign the same shall not be entitled to any compensation whatsoever.

Sect. 17. The board of engineers shall report from time to time to the mayor the names of such officers or members of the department, if any, as in their judgment should be removed or discharged, with their reasons therefor; and whenever, from any cause, there occurs in the department a vacancy which should be filled by the mayor and aldermen, the board of engineers shall recommend to them for their consideration the name of some proper person to fill the same.

Sect. 18. Any officer or member of the fire department, except the chief and assistant engineer, and the superintendent of fire alarms and his assistants, may at any time be removed or dismissed from the department by the mayor, or deposed from any office that he may hold therein.

SECT. 19. In all cases of removal from the department, the name of the party removed, with a statement of the reasons therefor, shall be entered on the records of the engineers, and a copy of the same shall be transmitted to the board of aldermen before their next regular meeting.

SECT. 20. There shall be paid to each officer and member of the department such sum as the city council may from time to time determine; and in case of the temporary absence of any member from the city, or his inability, in consequence of sickness, to perform his duties, he shall provide a substitute, whose name he shall return to the foreman of the company for approval; otherwise he shall be subject to all deductions which may accrue for his absence.

SECT. 21. Neither the members nor the officers of any of the companies shall assemble in any of the engine or other houses belonging to the department, except for the purpose of taking the engine or other apparatus on an alarm of fire, returning the same to the house, and taking the necessary care thereof after its return, and except as herein otherwise prescribed.

SECT. 22. Any officer or member of the fire department, who shall wilfully neglect or refuse to perform his duty, or shall be guilty of disorderly conduct or disobedience to his superiors in office, shall, for such offence, besides being subject to the penalty hereinafter provided, be dismissed from the department.

SECT. 23. Every person who shall have served according to law in the fire department for seven successive years, shall be entitled to receive a certificate thereof, signed by the mayor; and all persons who shall receive said certificate shall be entitled to wear the badge of the department, and to do duty therein, when desired so to do by the mayor, with the advice and consent of the board of aldermen, under such organization and management as they may determine.

SECT. 24. As many engine, hose, and hook-and-ladder companies shall from time to time be formed by the city council as they may deem expedient, and each company shall consist of as many officers and members as may be *nominated* from time to time by *the board of engineers and confirmed by* the board of aldermen.

SECT. 25. The officers and members of the fire department shall be paid monthly, except when otherwise ordered by the city council; and, except in case of sickness, death, or removal from the city, every officer or member thereof who shall not serve the whole of the month, or who shall be removed from the department or deposed from his office for cause, shall forfeit any and all compensation that would otherwise have been due to him at the time when such service ceased, or such deposing or removal took place.

SECT. 26. Every engine company shall have an engineman, fireman, and driver, who shall be permanently employed, and who shall at all times be in or about the engine house, except when unavoidably absent, and shall also have, until otherwise ordered, eight hosemen, including the foreman.

SECT. 27. Each hose company shall have a driver, who shall at all times, except when unavoidably absent, be in or about the house, and shall also have, until otherwise ordered, eight hosemen, including the foreman.

SECT. 28. Each hook-and-ladder company shall have at least three axemen and three rakesmen.

SECT. 29. The board of engineers shall make rules and regulations in respect to a driver and steward, either permanent or temporary, of hook-and-ladder companies, and define their duties; such rules and regulations, however, being subject to approval, alteration or rescission, as provided in the fourth section of this ordnance.

SECT. 30. Every engine, hose, and hook-and-ladder company shall have a foreman and clerk, and every hook-and-ladder company an assistant foreman in addition. *All the officers and members of companies shall be nominated annually, or whenever a vacancy occurs, by the board of engineers to the board of aldermen, and confirmed by the board of aldermen;* and in case of rejection another person shall be nominated, as aforesaid, before the next regular meeting of the board of aldermen; and these officers, when approved, shall receive certificates of appointment, signed by the mayor, and shall hold their places until removed, or until others are appointed in their stead.

SECT. 31. The engineman shall, under the direction of the board of engineers, have the sole care of the engine house intrusted to him, and of all the property therein belonging to the city. He shall be held personally responsible for the care and good order of the engine, and shall work and manage the same, and see that it is at all times in condition for immediate use. He shall be accountable for the proper performance of all duties required of the fireman and driver, and, in case of any neglect or delinquency on their part, shall report the same to the chief engineer.

SECT. 32. The foreman of each engine shall, at fires, direct the placing of the engine at a suitable place to obtain a supply of water, and have the charge and direction of the hose and hosemen; and the foreman of each hose company or hook-and-ladder company shall have charge of the apparatus belonging to his company, and the direction thereof, and of the driver and men belonging to his company. And the foreman of every company shall preserve order and discipline, at all times, among the members of the company under him, and require of them and enforce a strict compliance with the city ordinances, the rules and regulations of the department, and the orders of the engineers.

SECT. 33. In the absence of the foreman of any company, the assistant foreman, if there be one, otherwise the senior hoseman or hook-and-ladder man in service present, connected with the same company, shall perform the duties of the foreman.

Sect. 34. The fireman shall be under the immediate direction of the engineman, and shall perform all the duties that may be required of him by the engineman, on the engine and in the house, including cleaning the house, the engine, and other apparatus belonging to the company, and clearing the snow and ice from the sidewalk.

Sect. 35. The drivers belonging to the respective companies shall take care of, and properly groom the horses belonging to their respective companies, see that the same are at all times ready for immediate use, convey the apparatus to the place of the fire on an alarm being sounded, and be clerks of their respective companies. And it shall, in addition, be the duty of such of the drivers as are connected with hose or hook-and-ladder companies to see that the hose or other apparatus is ready at all times for immediate use, and to keep such hose and apparatus, and the house and stable, neat and clean, and clear the snow and ice from the sidewalks in front of the respective houses, and they shall be under the immediate direction of the foremen of their respective companies. The driver of each engine shall be under the immediate direction of the engineman, and shall, besides the duties herein prescribed to be performed by him, assist the fireman in the performance of his duties, and perform such other duties as may be required of him by the engineman.

Sect. 36. The clerks of the respective companies shall keep fair and exact rolls, specifying the time of admission, discharge, and age of the respective members of their companies, and shall also keep, in books provided by the city for that purpose, correct and faithful accounts of all city property intrusted to or connected with their respective companies, and of all absences and tardiness of the officers or members thereof, which rolls and record books shall always be subject to the order of the board of engineers, or the board of aldermen. Said clerks shall also make, or cause to be made, to the chief engineer, true and accurate returns, whenever called upon so to do, of all the members, with their ages, and of all the apparatus belonging to or connected with their respective companies, and shall also report monthly, at least, to the chief engineer, all absences and tardiness aforesaid.

SECT. 37. The hosemen of each engine company and of each hose company, and the axemen and rakemen and other members of each hook-and-ladder company, shall perform such duties as may be required of them by their respective foremen.

SECT. 38. The board of engineers, whenever in their judgment it may be expedient, may employ or permit to stay or sleep in the house, wherein a hose-carriage or hook-and-ladder carriage is kept, one or more members from the same company in addition to the driver.

SECT. 39. The officers and members of the several engine, hose, and hook-and-ladder companies shall, whenever a fire breaks out in the section of the city to which they are assigned for duty, repair to the place of the fire with their respective engines, hose, hook-and-ladder carriages, and other apparatus, in as orderly a manner as may be, according to the directions, if any be given, of the board of engineers, and exert themselves in the most orderly and efficient manner possible, in working and managing the said engines, hose, hooks and ladders, and other apparatus, and in performing any duty that they may be called upon to do by any engineer; and, upon permission of the chief or other engineer, they shall return said engines, hose, hook-and-ladder carriages, and other apparatus, in an orderly and quiet manner, to their respective places of deposit; *provided*, that, in the absence of all the engineers, such direction or permission may be given by the respective foremen.

Sect. 40. Whenever any person has received a certificate of appointment to any office under this ordinance, he shall be thereby immediately invested with all the authority conferred, and subject to all the duties imposed by the laws, the city ordinances, and the rules and regulations of the fire department; and whenever a vacancy occurs in the department, the same shall be filled as soon as conveniently may be.

Sect. 41. The engineers, officers, and members of the several companies shall, when on duty, wear such badges or insignia as the *board of aldermen* shall from time to time direct, to be furnished at the expense of the city, and no other person shall be permitted to wear the same, except under such restrictions and regulations as the *board of aldermen* may direct.

Sect. 42. No uniform, except such badges and insignia as are prescribed from time to time by the *board of aldermen*, shall be worn upon any occasion, by either officers or men belonging to the department, to indicate their connection therewith.

Sect. 43. *No company shall have power to appoint or discharge an officer or member.*

Sect. 44. No company shall leave the city, in case of fire in the neighboring cities and towns, except by the express order of the chief engineer or one of the assistant engineers; and no company shall leave the city for any other purpose.

Sect. 45. No associations, or organized societies or clubs of firemen, as such, shall be allowed in the department, except by the express permission of the city council.

Sect. 46. No company shall be allowed to impose fines upon its members. For every absence or tardiness there shall be deducted from the pay of the absent or tardy officer or member the sum of one dollar, which amount so deducted shall be paid over at the end of each quarter to the treasurer of the company to which such officer or member shall belong, to meet the incidental expenses of the company. And if any officer or member shall have been absent or tardy at more than one-third of the fires, or alarms of fires, occurring during the month, if more than five, except in case of sickness, such absence or tardiness shall be considered good cause for his discharge from the department.

SECT. 47. The board of engineers, notwithstanding the provisions herein contained, may, with the approval of the mayor, grant to any officer or member of the fire department, if they think it compatible with the interests of the department, a vacation not exceeding two weeks in any one year, upon such terms as they may think expedient.

And the mayor, with the advice and consent of the board of aldermen, may, if he sees fit, whenever any member or officer of the fire deparment shall not, by reason of such vacation or sickness, or otherwise, attend to his duties in the department, appoint a substitute to act in his place during his absence.

SECT. 48. Upon an alarm or discovery of fire, the members of the police department shall immediately communicate the fact to the central station by means of the signal-boxes in the district in which the fire may be, in accordance with the rules and regulations in regard to fire alarms. And in the night-time, the policemen, upon an alarm of fire being given or sounded upon the bells connected with the fire-alarm telegraph, shall immediately give further notice thereof within their respective districts by springing their rattles, crying "fire," and mentioning the district and box of the district in which the fire exists. And if any policeman neglects so to do he shall forfeit and pay a fine of not less than two, nor more than twenty dollars for every offence.

SECT. 49. *The mayor shall annually, on the first Monday of February, nominate to the board of aldermen, and by the approval of the said board appoint, a fire marshal and an assistant* *fire marshal, with the rank and pay respectively of captain and first lieutenant of police, whose duty it shall be to attend fires, examine and make report of their origin, prevent theft, preserve order, and take all necessary measures to secure to the fire department all necessary facilities in the extinguishment of fires. Said marshals shall, according to rank, have command over all the police present at fires, and not actively engaged during the presence of an engineer in putting out fires. There shall be placed in each police station, two or more pieces of Clark's linen hose, similar to those now attached to the stand-pipe in the city hall, of one hundred and fifty feet each in length, with couplings fitting the hydrants, and with stop-valves near the nozzles, and also two or more small hand engines or Johnson pumps, and with suitable buckets, and upon an alarm it shall be the duty of such members of the police as may be selected for that service, to repair therewith to the place where the fire may be, and there use their best skill and power to extinguish the fire, said policemen, while thus engaged, to be under the direction of the engineer, if present; otherwise, under the direction of the fire marshals.*

FIRE-ALARM TELEGRAPH.

SECT. 50. In the month of January in each year there shall be appointed a joint committee of the city council, consisting of two aldermen and three members of the common council, to be called the committee on the fire-alarm telegraph.

SECT. 51. The said committee shall have the care and management of the rooms, apparatus and machinery connected with the fire-alarm telegraph, and shall also have the power to appoint, upon the nomination of the superintendent, suitable persons to assist in the management of said fire-alarm telegraph, and also to discharge them, and to establish their compensation, unless it shall be specially provided for by the city council; and the said committee shall determine the persons to whom shall be intrusted the keys of the signal boxes connected with the fire-alarm telegraph, and, generally, shall have charge of the same, and control over the management thereof, subject to any special order of the city council.

SECT. 52. There shall be elected annually, on the first Monday in February, or within sixty days thereafter, by concurrent vote of the two branches of the city council, a superintendent of the fire-alarm telegraph, who shall hold his office for one year, from the first Monday in April in the year in which he is elected, and until his successor is elected and qualified, or he is removed. He may be removed at the pleasure of the city council, and all vacancies may be filled at any time for the unexpired term. He shall receive such compensation as the city council shall from time to time determine.

SECT. 53. Said superintendent shall have the charge of the fire-alarm telegraph, under the direction of the committee on the fire-alarm telegraph, and shall see that the same is kept in good repair, and he shall be held responsible for the same.

SECT. 54. Alarms of fire shall be given by means of the fire-alarm telegraph in accordance with the rules and directions heretofore established for that purpose by the committee on the fire-alarm telegraph.

SECT. 55. The committee on the fire-alarm telegraph shall have power from time to time to alter or change said rules and directions, and the same shall be binding upon all persons after said rules and directions, as altered, have been placed on file in the office of the engineers of the fire department, and with the city clerk, and the same shall then be published; but the city council shall at all times have power to alter, amend, or annul the same.

SECT. 56. No person shall open any of the signal-boxes connected with the fire-alarm telegraph, for the purpose of giving a false alarm, nor interfere in any way with said boxes, by breaking, cutting, injuring, or defacing the same, nor turn the cranks therein, except in case of fire, nor tamper or meddle with said boxes or any part thereof.

SECT. 57. Any person who shall be guilty of a breach of any of the provisions of this ordinance, except as otherwise specially provided in any section thereof, shall forfeit and pay a fine of not less than two dollars nor more than fifty dollars for each offence.

SECT. 58. *The ordinance in relation to the fire department, printed in the revised ordinances, adopted the thirty-first day of December, A. D. 1869, and all amendments and additions thereto, are hereby repealed, said repeal to take effect upon the reorganization of the fire department as herein provided.*

RULES.

SECTION 1. All members of the Boston fire department, and substitutes, not exceeding two for each engine and hose company, and four for each hook-and-ladder company, shall wear while on duty as firemen, or at fires, in addition to the fire-hat and leather badge now worn, the corporation badge, in a plain, conspicuous manner on the vest or coat, and no member will be allowed to enter the line at the fire, or at any building when on fire, without said badge.

SECT. 2. No member shall lend his badge on any pretext whatever, under the penalty of dismissal from the department.

SECT. 3. Any person not a member, nor regularly appointed a substitute, appearing at a fire with a badge, will be deemed guilty of a misdemeanor, and will be punished accordingly.

SECT. 4. Any member who loses his badge shall immediately advertise the same, and use the utmost diligence to recover it, and in case of failure shall be charged five dollars for the badge.

SECT. 5. If any member, in going to or returning from a fire, shall behave in any way unbecoming a fireman, any person aggrieved may report to the chief engineer the number of his badge; and if said fireman refuses to give his number correctly, it shall be deemed good cause for his dismissal from the department.

SECT. 6. Each engine and hose company may have substitutes not exceeding two in number, and each hook-and-ladder company not exceeding four, to do duty in place of persons absent from duty, as provided by city ordinance; viz., in cases of sickness or absence from the city.

SECT. 7. Said substitutes shall be approved by the chief engineer, or by the engineer of the district, upon the recommendation of the foreman of the respective companies.

CITY OF BOSTON.

Orders accompanying the Minority Report of the Committee on the Reorganization of the Fire Department, (printed City Doc. No. 106), 1873: —

In Common Council, September 4, 1873.

Ordered, That the Cochituate Water Board consider and report upon the expediency of introducing the Holly system of water supply and fire prevention, in whole or in part, and that said board also report upon the merits of said system, as compared with other systems.

Ordered, That the Joint Standing Committee on the Fire Department report plans and estimates for a repair shop for said department, and also recommend a location for said shop, and that the expense thereof be charged to the appropriation for the Fire Department.

City Document.—No. 110.

CITY OF BOSTON.

THIRTY-FIFTH LOCATION

OF THE

METROPOLITAN RAILROAD.

1873.

CITY OF BOSTON.

In Board of Aldermen, Sept. 22, 1873.

The Committee on Paving, to whom was recommitted the petition of the Metropolitan Railroad Company, for leave to extend their location by the construction of tracks in Stoughton street, Ward 16, report the accompanying order of location.

For the Committee,

L. R. CUTTER,
Chairman.

Ordered, In addition to the rights heretofore granted to the Metropolitan Railroad Company, to lay down tracks in several of the streets of the City of Boston, said company shall have the right to lay down a double track on Stoughton street, from Hudson street to Hancock street, and to connect said double track with the tracks now laid down on Stoughton street, near Hudson street, and on Hancock street, at Upham's Corner.

The right to lay down the tracks located by this order is upon the condition that the whole work of laying down the tracks, the precise location of the same, the form of rail to be used, and the kind and quality of pavement used in paving said track, shall be under the direction and to the satisfaction of the Committee on Paving, and the Superintendent of Streets, and shall be approved by them.

Also upon the condition that the said Metropolitan Railroad Company shall accept this order of location, and agree in writing to comply with its several conditions, and file said acceptance and agreement with the City Clerk, within thirty days of the date of its passage; otherwise, it shall be null and void.

City Document.—No. 111.

CITY OF BOSTON.

EXTENSION OF

PRESCOTT STREET,

FROM

TRENTON TO EAGLE STREET.

1873.

CITY OF BOSTON.

In Board of Street Commissioners,
September 27, 1873.

Resolved, That the safety and convenience of the inhabitants of the city require that Prescott Street in East Boston should be extended from Trenton to Eagle street, and that the grade thereof should be established, according to a plan and profile hereinafter referred to; and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to The City of Boston, bounded as follows, viz.: northeastwardly by the northeasterly line of the proposed extension of Prescott street, there measuring forty-eight and $\frac{21}{100}$ feet; westwardly by land hereinafter described as taken from William Wood, fifty-four and $\frac{10}{100}$ feet; and southeastwardly by Trenton street, twenty-four and $\frac{56}{100}$ feet; containing five hundred and ninety-two square feet, more or less.

A parcel of land belonging to William Wood, bounded as follows, viz.: eastwardly by land before described as taken from the City of Boston, there measuring fifty-four and $\frac{10}{100}$ feet; northeastwardly by the northeasterly line of the proposed extension of Prescott street, three and $\frac{57}{100}$ feet; northwardly by land hereinafter described as taken from Hanford Lockwood and others, forty-eight and $\frac{39}{100}$ feet; westwardly by land hereinafter described as taken from Thomas Hills, and by other land hereinafter described as taken from William Wood, fifteen and $\frac{20}{100}$ feet; southwestwardly by the southwesterly line of the proposed extension of Prescott street, sixty and $\frac{20}{100}$ feet; and southeastwardly by Trenton street, twenty-five and $\frac{44}{100}$ feet; containing twenty-five hundred and seventy-six square feet, more or less.

Another parcel of land belonging to WILLIAM WOOD, bounded as follows, viz.: eastwardly by other land before described as taken from William Wood, five and $\frac{20}{100}$ feet; northwardly by land hereinafter described as taken from Thomas Hills, two and $\frac{63}{100}$ feet; and southwestwardly by the southwesterly line of the proposed extension of Prescott street, five and $\frac{83}{100}$ feet; containing seven square feet, more or less.

A parcel of land belonging to HANFORD LOCKWOOD, SMITH FOWLER AND MARY D. FOWLER, bounded as follows, viz.: northeastwardly by the northeasterly line of the proposed extension of Prescott street, there measuring sixty-seven and $\frac{34}{100}$ feet; northwardly by Eagle street, seventeen and $\frac{82}{100}$ feet; westwardly by land hereinafter described as taken from Thomas Hills, sixty feet; and southwardly by land before described as taken from William Wood, forty-eight and $\frac{39}{100}$ feet; containing nineteen hundred and eighty-six square feet, more or less.

A parcel of land belonging to THOMAS HILLS, bounded as follows, viz.: eastwardly by land before described as taken from Hanford Lockwood and others and from William Wood, there measuring seventy feet; northwardly by Eagle street, thirty-eight and $\frac{29}{100}$ feet; southwestwardly by the southwesterly line of the proposed extension of Prescott street, seventy-eight and $\frac{56}{100}$ feet; and southwardly by land before described as taken from the said William Wood, two and $\frac{63}{100}$ feet; containing fourteen hundred and thirty-two square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, It is Therefore Ordered, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, and that the grade thereof be established, according to a plan of the said extension and a profile of the grade thereof made by Thos. W. Davis, City Surveyor, each bearing date October 26, 1872, and deposited in his office. And this Board doth adjudge that the expense of extending the said Prescott street, as aforesaid, will amount to twenty-four hundred thirty-six and $\frac{70}{100}$ dollars; and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

Estimate of Damages Occasioned by Extension of Prescott, from Trenton to Eagle, street, 1873.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before laying out, widening, or extending.	Value of buildings after laying out, widening, or extending.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.
City of Boston	. . . . . .	592	35	$207 20	. . . . . .	. . . . . .	. . . . . .	. . . . . .	$207 20
William Wood	. . . . . .	2,576	40	1,030 40	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,030 40
William Wood	. . . . . .	7	40	2 80	. . . . . .	. . . . . .	. . . . . .	. . . . . .	2 80
Hanford Lockwood and others	. . . . . .	1,986	35	695 10	. . . . . .	. . . . . .	. . . . . .	. . . . . .	695 10
Thomas Hills	. . . . . .	1,432	35	501 20	. . . . . .	. . . . . .	. . . . . .	. . . . . .	501 20
		6,593	. . . . . .	$2,436 70	. . . . . .	. . . . . .	. . . . . .	. . . . . .	$2,436 70

City Document. — *No.* 112.

CITY OF BOSTON.

REPORT

OF

COCHITUATE WATER BOARD

ON

SUPPLY OF WATER

FOR

EXTINGUISHMENT OF FIRES.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Sept. 15, 1873.

Referred to Committee on Water, and ordered to be printed. Sent down for concurrence.

L. R. CUTTER, *Chairman.*

IN COMMON COUNCIL, Sept. 18, 1873.

Concurred.

E. O. SHEPARD, *President.*

CITY OF BOSTON.

Office of the Cochituate Water Board,
City Hall, September 12, 1873.

To the City Council of Boston: —

By the direction of this Board, I enclose the report and plans submitted by Mr. J. P. Davis, City Engineer, to whom was referred certain questions regarding needed changes and additions to the present system of water-pipes, detailed, in an order of the Board of Aldermen, to this Board, June 16, 1873.

The "adequate supply of water for all necessary purposes," referred to in the order, doubtless refers to an adequate supply of water to meet such conflagrations as occurred in November last; as the present system of supply is ample for all domestic and manufacturing purposes, while in addition it furnishes a better supply for fire purposes than is possessed by any other large city in this country.

While the supply for fire purposes is so large and generous, still it will be wise, perhaps, to incur a reasonable amount of expenditure to further increase it, so that no just cavil or criticism can be made as to the action of the City Government, or its agents having the matter more particularly in charge.

With this view, this Board concurs in the additions and changes which are more particularly recommended by the City Engineer, which he estimates will cost some $389,000.

The additional improvements, costing some $384,000, *suggested* in the report, " to further augment the capacity of the general system," in the opinion of this Board may be safely left to a future day, as those *recommended* by the City Engineer, and mostly determined upon by this Board, seem to meet all the reasonable requirements of the present time.

The changes and improvements which have been and are now being made, will probably exhaust the appropriations for the current fiscal year, and to the end that no valuable time may be lost in forwarding the needed work, this Board recommend a special appropriation of $250,000, to be expended for the purchase of pipes and other material, and the furtherance of such needed work as may be done before the cold weather closes in this fall.

The annual appropriations for this department have usually been made so late in spring months that much valuable time is lost before the pipe contracts are made and the delivery commences. If contracts were made in the autumn, the pipes could be made in the winter months, and shipped here ready for use as soon as navigation opens, and probably better terms could be made with the manufacturers.

Some $200,000 of the appropriation asked for will be needed for pipes and fixtures, and the balance may be judiciously used for work already determined upon, should the season remain open as late as it sometimes does.

This communication has been withheld for some little time, from some considerations affecting the proposed substitution of salt water for fire purposes in certain sections of the city, by an independent system of pumping works. As this is a very important matter, and one requiring careful consideration, and as the Board of Aldermen has quite recently passed an order requiring a special report upon it, it will be best to wait until the question has been more carefully investigated before a definite opinion is given upon the matter.

Whether the new pumping system is adopted or not, still the appropriation recommended by this Board is very desirable, should the City Council agree with the suggestion submitted by the City Engineer.

For the Cochituate Water Board,
JOHN A. HAVEN,
President.

City Engineer's Office, City Hall,
Boston, August 16th, 1873.

John A. Haven, Esq.,
President Cochituate Water Board: —

Sir: The following order of the City Council was referred to me for a report, by your Board, on June 19th: —

"In Board of Aldermen,
"June 16th, 1873.

"*Ordered*, That the Cochituate Water Board be requested to consider and report to the City Council, as soon as practicable, what alterations in, and additions to, the present system of water pipes and hydrants would be required to render them of such capacity as would afford an adequate supply of water for all necessary purposes; to include the number and kind of hydrants, size and quantity of pipes, and cost, including expense of laying the same; 1st, for the city proper; 2d, for South and East Boston; 3d, for Roxbury and Dorchester. Also what portions of the work could be completed during the present year, and whether any additional appropriation for the same would be needed."

Before giving the estimates of quantities and cost that have been prepared in answer to the above order, I desire to call attention to certain alterations and extensions of the existing system of distributing mains and pipes, that have already been either determined upon by your Board, or recommended to it for adoption.

A plan for re-piping the "burnt district" was submitted and approved early this year, and an appropriation of $85,000, to cover the cost of the work required, has been made by the City Council.

Since then your Board has decided to make a number of changes and additions in other parts of the pipe system, viz., to lay a 12-inch main from Tremont street, through Dover and Fifth streets, to the South Boston high-service district; to lay a 16-inch pipe the entire length of North Charles street; to lay a 12-inch pipe in Washington street, from Boylston to Summer; to connect one with another various lines of 12-inch pipes which now terminate with "dead ends"; to replace in a number of streets and places 6 and 4-inch pipes by 8-inch, and at other points to replace 4-inch pipes by 6-inch. The estimated cost of this work is $78,000.

Other changes which were recommended to the Water Board, either verbally or in the May report of the City Engineer, are now under consideration. These are, to lay a 20-inch high-service main from the pumping works to Dover street, and a 16-inch main from Dover street to the Common, there to connect with the 16-inch pipe lately laid across the Common, and through Joy street to Mount Vernon; to lay a 16-inch pipe on Tremont street, from Boylston to School; to lay 12-inch pipes in the following streets: Temple Place from Tremont to Washington, Cornhill from Court to Washington, Hanover street from Court to Union, Commercial street from Prince to Fleet, Beach street from Washington to Federal, South street from Beach to Albany, Albany street from Way to Dover, Dorchester street from First to Second, First street from Dorchester to O, O street from First to Fourth, and Granite street from Second to Mt. Washington avenue; to lay 8-inch pipes in Salem, Essex and other streets, and to lay 6-inch pipes at various places (as on the wharves); to replace those of 4 inches diameter. The estimated cost of this work is $220,000.

In addition to the above, there are changes and extensions which should be made at an early day in East Boston, Roxbury, and Dorchester, such as, to lay 12-inch pipes in

Meridian and Marginal streets and in Blue Hill avenue; to extend the 24-inch low-service main from Upham's corner to Field's corner; and to lay 8-inch pipes in a number of streets. The estimated cost of this work is $91,000.

The total amount of the above estimates is $474,000, from which is to be deducted the $85,000 already appropriated. This leaves $389,000 as the amount of a further appropriation required to cover the cost of the proposed work.

Of this amount about $190,000 is for new mains and extensions, which should be laid within a year or two, at the latest, to provide for the natural increase in the daily consumption of water. The 12-inch high-service main for South Boston, the cost of which is included in the above estimate, is now being laid at an expense of about $40,000.

The order of the City Council, in answer to which this report is made, requires that there shall be proposed such alterations in, and additions to, the present system of water pipes and hydrants, as will render them of capacity to afford "an adequate supply of water for all necessary purposes."

The machines now in use for extinguishing fires necessitate for their supply the delivery of large volumes of water within small areas. The present tendency is, not only to increase the number of engines that are brought into action at a single fire, but also to employ more powerful ones.

Experience shows that conflagrations of great magnitude may be caused by the burning of low buildings, or dwellings, as well as by the burning of larger and higher ones, used for business purposes.

It therefore follows that to furnish an adequate supply for all necessary purposes, a capacity of pipes must be provided that will deliver very large volumes of water at any point of the city which is, or which may soon be, thickly built upon.

Without fixing upon a definite quantity of water to be delivered in a given time within a given area, I have endeavored to so augment the general capacity of the pipe system, by providing new or enlarged feeders to the smaller pipes, and by cutting the latter into short lengths, that a *very liberal* supply may be delivered at all points within the range of the distributing pipes.

The accompanying plans of Boston proper, South Boston and East Boston, and the following schedule, will show the alterations and additions proposed for this purpose.

Schedule showing proposed alterations in, and additions to, the distributing pipe system of Roxbury and Dorchester.

ROXBURY LOW-SERVICE.

To lay 570 feet 12″ pipe in Blue Hill avenue, from Stafford to Woodville square.

To lay 2,900 feet 12″ pipe in Putnam and Cabot streets, from Dudley to Ruggles.

To lay 1,160 feet 8″ pipe in Hammond park, from Tremont street to Shawmut avenue.

To lay 550 feet 8″ pipe in Ball street, from Washington street to Shawmut avenue.

To lay 850 feet 8″ pipe in Winslow street, from Dudley to Eustis.

To lay 600 feet 8″ pipe in Dunlow street, from Elmwood to Dudley.

To lay 440 feet 8″ pipe in Elmwood street, from King street to Clay.

To lay 330 feet 8″ pipe in Clay street, from Elmwood to Tremont.

To lay 260 feet 8″ pipe in Bumstead lane, from Conant street to Longwood avenue.

To lay 630 feet 8″ pipe in Vine street, from Mount Pleasant avenue to Dudley street.

To lay 720 feet 8″ pipe in Fairland street, from Mount Pleasant avenue to Moreland street.

To lay 350 feet 8″ pipe in Cleveland street, from Winthrop to Moreland.

To lay 930 feet 8″ pipe in Moreland street, from Fairland to Blue Hill avenue.

To lay 600 feet 8″ pipe in Alaska street, from Perrin street to Blue Hill avenue.

To lay 260 feet 6″ pipe in Cunard street, from Cabot to Tremont street.

To set 6 Lowry hydrants.

ROXBURY HIGH-SERVICE.

To lay 1,500 feet 12″ pipe in Highland street, from Fort avenue to Norfolk street.

To lay 1,200 feet 12″ pipe in St. James street, from Shawmut avenue to Warren street.

DORCHESTER.

To lay 2,300 feet 24″ pipe in Dorchester avenue, from Adams to Pleasant street.

To lay 1,870 feet 24″ pipe in Pleasant street, from Dorchester avenue to Stoughton street.

To lay 1,450 feet 24″ pipe in Stoughton street, from Pleasant street to Boston.

The estimates of quantities are as follows : —

BOSTON PROPER.

9,260	lineal	feet	of	20-inch	pipe.
7,180	"	"	"	16 "	"
27,380	"	"	"	12 "	"
32,710	"	"	"	8 "	"
28,980	"	"	"	6 "	"
310	Lowry hydrants.				

(Part of the above 20″ pipe intended for the Beacon Hill and South Boston high-service is to be laid in Roxbury.)

SOUTH AND EAST BOSTON.

45,640 lineal feet of 12-inch pipe.
17,600 " " " 8 " "
10,880 " " " 6 " "
224 Lowry hydrants.

ROXBURY AND DORCHESTER.

5,620 lineal feet of 24-inch pipe.
6,170 " " " 12 " "
7,420 " " " 8 " "
260 " " " 6 " "
6 Lowry hydrants.

The estimates of cost are as follows: —

First. — Boston Proper.

Pipes laid, including gates and specials	$325,249 00
Hydrants, on old and new pipes	45,290 00
House-service pipes	33,500 00
	$404,039 00

Second. — South and East Boston.

Pipes laid, including gates and specials	$214,520 00
Hydrants, on old and new pipes	29,580 00
House-service pipes	23,900 00
	$268,000 00

Third. — Roxbury and Dorchester.

Pipes laid, including gates and specials	$86,000 00
Hydrants on new pipes	600 00
House-service pipes	4,500 00
Rock excavation	10,000 00
	$101,100 00
Total amount of estimates	$773,139 00

In the above estimate, the cost of that part of the work classed under the head of extensions is $228,000.

It will be seen that the cost is great, and the question arises whether the advantages to be gained from the changes suggested will warrant the expenditure of so large a sum.

The system, as thus modified, would give no greater capacity than, in view of the very large supply of water now demanded for fire purposes, most engineers would provide for a city where the distributing pipes are not already laid.

If, however, the existing system of this city be modified by the laying of the new mains and pipes, as already recommended to your Board, it will furnish a very generous supply for all purposes.

Respectfully submitted,

JOS. P. DAVIS,

City Engineer.

City Document.—No. 113.

CITY OF BOSTON.

REQUEST

FOR

AN ADDITIONAL APPROPRIATION

FOR

MARKETS.

CITY OF BOSTON.

In Board of Aldermen, Sept. 29, 1873.

The Committee on Markets beg leave to represent that an additional appropriation of five thousand five hundred dollars will be required to cover the expenses of their department during the present financial year.

Since the estimates were made, the market accommodations have been enlarged by obtaining the use of the lands owned by the proprietors of India Wharf, between India street and Atlantic avenue, until May 1, 1875. The city is allowed to occupy the lands to that date free of rent; but some expense has been incurred in preparing them for occupation, and this necessitates the present application for an additional appropriation. The occupants of stands on these new market grounds have already paid into the City Treasury the sum of six thousand dollars, which is placed to the credit of the Sinking Fund. All receipts in excess of this first expense of putting the grounds in order will represent a clear profit to the city.

The following is a statement of the expenses to date: —

Salary Superintendent . . .	$1,250 00
" Deputy Superintendent .	750 00
" Weigher	360 00
" Watchmen	2,046 00
Amount carried forward,	$4,406 00

Amount brought forward,	$4,406 00	
Furniture, etc.	95 24	
Gas	273 37	
Repairs on stoves	8 37	
Electric bells and small items . .	112 00	
Expenses of committee	39 20	
		$4,934 18
India street market, filling, teaming, lumber and curpenter's work		5,006 53
Total expenditure		$9,940 71

General apppropriation	$10,000 00
Expended	9,940 71
Remaining on hand	$59 29

The committee would respectfully recommend the passage of the accompanying order.

For the committee,

NEHEMIAH GIBSON,
Chairman.

Ordered, That the Auditor of Accounts be authorized to transfer the sum of five thousand five hundred dollars from the Reserved Fund to the appropriation for Markets.

City Document.—No. 114.

CITY OF BOSTON.

THIRD REPORT

BY THE

Superintendent of Printing.

SEPTEMBER, 1873.

Presented in print in accordance with a vote of the Committee on Printing.

CITY OF BOSTON.

To His Honor the Mayor and the Committee on Printing.

The undersigned, Superintendent of Printing, respectfully presents a statement of his official transactions for the second year of his term of office.

PRINTING.

The existing contract is for three years, from July 1, 1871, with Messrs. Rockwell & Churchill. By the terms of the contract, the bills are made up to the 15th day of each month.

The bills, as certified by the Superintendent, have been as follows: —

One month to Sept. 15, 1872, ...	$2,845 52
" " " Oct. 15, "	1,956 85
" " " Nov. 15, "	1,776 45
" " " Dec. 15, "	1,542 24
" " " Jan. 15, 1873, ...	1,836 56
" " " Feb. 15, "	5,237 10
" " " March 15, "	2,338 60
" " " April 15, "	3,002 52
" " " May 15, "	4,253 04
" " " June 15, "	3,923 23
" " " July 15, "	4,233 89
" " " Aug. 15, "	10,064 34
Completed work of 12 months, . . .	$43,010 34
Stock Storage, etc., 12 months, at $75, . .	900 00
Amount carried forward	$43,910 34

Amount brought forward	$43,910 34
Storage, etc., certified for 3½ months previous,	272 50
Printing destroyed by fire, paid by order of City Council	1,329 52
Total	$45,512 36

The bills for the month ending August 15th, comprise a Class List for the Public Library, $3,225.80; the Auditor's Report, $2,242.80; and the School Report, $1,868.10. The closure of these large items leaves in the printing office the minimum amount of uncompleted work, in mid-summer, therefore at the most favorable time for completing an annual report.

The last Report of the Superintendent stated the amount of Printing bills, from the beginning of the present contract, July 1, 1871, to August 15th, 1872, a period of thirteen and a half months, at $38,541.38; and estimating the small amount of unfinished work at the latter date, the average amount for *twelve* months was stated at $35,576.66. Adding to this the sum of $900 subsequently voted to the contractors for services relating to the City Stock, and the aggregate is $36,476.66. The aggregate for the second year, including the storage item, but excluding the loss by fire, is $43,910.34, — an excess of $7,433.68 over the first year. As this comparison is of two consecutive years under the same printing contract and system of supervision, it indicates clearly the *increased quantity* of Printing done the last year. No such data for comparison existed the previous year, between the former contract and system, and the present one. This is an important consideration in comparing results, and the larger quantities received for the sums expended should be kept in mind, in comparing the respective years.

The printing continues to be well executed, with due promptness, and to the general satisfaction of the Departments and County officials.

PRINTING STOCK.

Amount purchased during year ending Sept. 1, 1873,	$14,037 46
On hand at beginning of the year,	2,173 00
	$16,210 46
On hand at close of the year,	2,702 00
	$13,508 46
Amount of above replacing Stock destroyed by fire,	1,317 00
Consumed during the year in printing,	$12,191 46

The Report for the first year stated the consumption of Stock at $11,062.32. The second year shows an increased consumption of $1,129.14, not including the loss by fire,—an increase corresponding to the increased amount of printing.

STATIONERY.

Amount purchased during year ending August 1, 1873,	$10,732 56
Amount purchased the preceding year,	10,344 99
Increase of last year,	387 57

COMPARATIVE SUMMARY.

Printing, for the last year, (including storage, &c., and excluding loss by fire,)	$43,910 34
Stock consumed the last year, (excluding loss by fire,)	12,191 46
Stationery, for the last year,	10,732 56
Total,	$66,834 36

Aggregate of preceding year, per Second Report, . . .	$56,983 97	
Subsequent allowance for Storage, &c.	900 00	
		57,883 97
Net increase in Printing, Stock and Stationery,		$8,950 39

The last Report by the Superintendent showed a saving for the first year of his official term, amounting to over $20,000, above all cost of his office and salary. Taking the same basis of comparison for the second year of his term, and averaging the *increase in quantity* proportionally, a gain ensues in the city's favor exceeding $23,000, — being a gain for the two years during which the office has existed, exceeding $43,000, the total expenditure for the two years being $124,718.33. To this expenditure should be added the Superintendent's salary of $2,500 per year. His office, occupying but a small portion of a room of common use for other purposes, without in any way interfering therewith, can hardly be considered as even a rental expense. Any other expense attending his office is comprised in the preceding statistics.

SUMMARIES IN THE AUDITOR'S REPORTS.

The financial year comprised in the Auditor's Report begins on the first of May; consequently, but one year and eight months of the term of this new office is covered by the Auditor's Reports to the present financial year. The following table is compiled from the Auditor's Reports of the last three years, and explanatory notes are appended to show the comparative results of this office, so far as the same can be known from this fractional comparison.

	Printing, including Paper and Binding.	Stationery and Blank Books.	Binding, exclusive of Printers' Contract.	Total.
Year ending April 30, 1871 . . .	63,938 33	20,523 88	6,772 77	91,234 98
" " " 1872 . . .	48,311 64	24,697 27	6,657 29	79,666 20
" " " 1873 . . .	56,284 63	32,883 79	4,269 76	93,438 18

Explanatory Notes.

Year ending April 30, 1871, as in Table		$91,234 98
Deduct items such as are not subject to supervision by Supt. Printing, namely: —		
Stationery for School Department . . .	$5,400 04	
Binding for Public Library	4,734 37	
		10,134 41
Amount for comparison with subsequent years . . .		$81,100 57
Year ending April 30, 1872, as in Table		$79,666 20
Deduct items not subject to Supt.'s supervision, namely: —		
School Stationery	$9,635 45	
Library Binding	5,157 71	
Superintendent's salary, eight months . .	1,666 67	
		16,459 83
		$63,206 37
Amount less than preceding year, gain, (covering first eight months of Supt.'s term)		17,894 20
		$81,100 57
Year ending April 30, 1873, as in Table		$93,438 18
Deduct items not subject to Supt.'s supervision, namely: —		
School Stationery	$17,934 54	
Library Binding	2,859 61	
Superintendent's salary, one year . .	2,500 00	
		23,294 15
		$70,144 03
Amount less than year ending in 1871, gain . . .		10,956 54
		$81,100 57

Add to above amount of	10,956 54
The loss by fire, included above	2,646 52
And net increase of Printing, Stock and Stationery .	8,950 39
Gain for the year in comparison with 1871	$22,553 45

Besides the School Stationery, and Library Binding, above stated, a few items of Drawing and other Stationery, not comprised in the Superintendent's Department, are also included in the Auditor's table; but they do not essentially vary the conclusions above derived, being substantially offset by the value of stock on hand, which appears as expenditure in the Auditor's statement. A very considerable gain also exists in the increased quantity of Stationery required for the public service, which is included in the expenditures, but which cannot be defined.

It appears, therefore, by the Superintendent's actual accounts, tested by the Auditor's Reports, that the saving of $43,000 before stated has been realized by the city during the past two years. This saving has been principally derived from the purchase of Stock and Stationery by the Superintendent. Taking into account the amount paid the Printers for care and storage of stock, etc., the present and former printing contracts may be considered nearly equal; but it is to be remembered that the present contract continues at rates as low as the former contract, or even lower; while the former contractors, in their renewed proposals, considerably increased their rates.

COUNTY PRINTING AND STATIONERY.

In the Auditor's Report, page 258, under "County of Suffolk," are the County accounts passing through the Auditor's office, supervised by the Superintendent of Printing. Following the heading, "County of Suffolk," is the expression, "except on drafts of Judges." The amount comprised in this excepted class of accounts, is partly stated and partly included in other items appearing in the Auditor's Report, pages 188, 189, being payments by the County Treasurer, reported to the Auditor. An examination of the County Treasurer's accounts, for the last financial year, shows the following aggregates for Printing and Stationery:—

	Printing.	Stationery.
Superior Court — Criminal Session,		$525 83
" " Civil Session,	$744 48	1,551 07
Supreme Judicial Court,		321 52
Municipal Court — Criminal Session,	1,202 50	217 30
" " Civil Session,	800 66	197 23
	$2,747 64	$2,812 95

making a total of $5,560.59, which is not comprised in the Auditor's Table of Printing and Stationery, and has no supervision by the Superintendent of Printing; although paid by the city on county account.

By suggestion of the Judges, the Committee on Printing have taken this subject under their advisement, and it is probable that this part of the County expenses will be placed upon the same footing as those portions now superintended by the proper city officials.

THE PROBATE OFFICE.

A very important work, requiring much care, labor, professional skill, and considerable expense, the subject of a contract made in May, 1872, with D. S. Gilchrist, Esq., by the Committee on County accounts, namely, the arrangement of all the papers in the Probate Office, from 1638 to 1870 inclusive, a period of 233 years, is now near its completion.

Up to 1861, the papers, in the different cases, instead of being kept separate, and so arranged as to be easily accessible, were tied up promiscuously in bundles of greater or less size, marked with a certain date, and placed upon shelves. An original paper could be found only by ascertaining the date when it was filed in court as nearly as possible, and then examining the heterogeneous contents of these different bundles.

But with 1861, pursuant to directions given by the present Judge of the Court, Hon. Isaac Ames, soon after he assumed the duties of his office in 1858, the system of filing all the papers in each case by themselves was commenced, and continued to the present time, in the same manner as those prior to that time are now being arranged.

Under the present system, the papers belonging to each estate are collected and placed in a separate wrapper-envelope, properly endorsed, and then all the cases are chronologically arranged and consecutively numbered. Each paper bears the number of the case to which it belongs, so that any disarrangement can be at once discovered, and corrected. These envelopes are placed in tin boxes arranged according to the numbering of the cases.

The probate cases down to the year 1855 inclusive number 40,350. The cases for the remaining 15 years, to 1870, will amount to 12,000 or 15,000 more. 30,281 envelope wrappers, and 124 gross of rubber bands have been supplied by this office for these newly arranged papers.

A classified index of the names of all these cases, and a reference to the number of each case, completes the system to 1870. Commencing with 1871, the same system of classifying and numbering the papers is continued.

But a very important addition to this system has been made, beginning with 1871, by adopting a docket in which is entered in chronological order, as the cases are commenced in court, the number of the case, its name, every paper filed or recorded in the case, its date when entered or acted upon, and the volume and page where it is recorded, and such items of information as experience shows are the most common subjects of inquiry in the Probate Office.

A single glance shows the exact condition of every case. These docket entries in each case are an index to the files and records, and to be sought only in one place. The only index hereafter to be required is one very easily prepared from the indexes of each docket, giving in a classified form the name and number of each case, at such times as experience shall indicate to be useful. With this docket system all real difficulty in examining cases vanishes, and little or no official assistance will be required by any one desiring to know what has been done in settling any estate. Two dockets each year are now required, and a classified index has been prepared for the first five.

In supplying Printing, Stock and Stationery for the Probate Office, which is done by Requisitions on the Superintendent of Printing, the best economy is held to be that which provides the very best materials, the work being done for many generations, and subjected to very hard usage from the constant handling both of records and papers, which are referred to in settling questions involving property of many millions in amount. Too many instances can be found where valuable papers in a short time have separated into several pieces, from the poor quality of the paper upon which they were printed. A record may be replaced; an original paper cannot be.

The efforts of the Superintendent are, therefore, directed to procuring the best and most durable stock in the world for the Probate office; and he believes he has succeeded.

The Binding of the Probate Records is supplied from this office. From 1638 to the present time, there are 516 volumes of these records; numbered, however, only to 464, some of the numbers necessarily applying to two of the volumes. The volumes formerly were not consecutively numbered, but were arranged in groups, embracing the volumes containing a certain class of papers, and were referred to by their titles, such as "Administration," etc., and its number in the groups. As a result of the former system of recording, the different papers recorded in any case will often be found in many volumes, widely separated as to place. Now, records of all kinds as they are made up are placed in the same volume.

All the volumes (516) from 1638 to the present time having been consecutively numbered, (to 464 as above stated,) under the system of consecutive numbering the different groups are arranged as follows : —

1 to 104,	inclusive,	All the Records.
105 to 169	“	Wills and Miscellaneous Papers.
170 to 238	“	Administration.
239 to 272	“	Relative to Testate Estates.
273 to 308	“	Inventories.
309 to 328	“	Evidence Perpetuated.
329 to 341	“	Trusteeships.
342 to 369	“	Sales of Real Estate.
370 to 373	“	Evidence Perpetuated since August, 1862.
374 to 422	“	Guardianship.
423 to 435	“	Widow's Allowance, Dower, etc.
436 to 451	“	Distribution, etc. Personalty.
452 to 453	“	Insolvent Estates.
—— — 454	“	Adoption and Change of Name.

Beginning with the year 1872, vol. 455, records of all kinds, as above stated, are placed in the same volume.

It may not be out of place to call attention to a very much needed improvement yet unprovided, to render the probate records properly available for public reference. Up to the commencement (1871) of the Docket system, the 506 preceding volumes can only be consulted by examining an alphabetical index to *each volume*, (506 separate indexes,) without the classification of names now in general use in all indexes of any extent. An index to the records, bringing together all the single indexes in a classified form, such as is in use in the Registry of Deeds or similar to the alphabetical classification of the Boston Directory, would save an immense amount of time now spent in examining the records, and ensure much greater accuracy in the results of a search. Without such an index the examination of all estates prior to 1871, except by access to the original papers, (a method much to be deprecated, exposing, as it does, valuable original papers, such as wills, bonds, agreements, receipts, etc., to the danger of being worn out by constant handling, loss by carelessness or dishonesty, mutilation and displacement,) will still be very burdensome, laborious and often unsatisfactory, and the system of the office still very defective. More office clerks will be required, and the uninitiated public still be deprived of easy access to the records.

RULES FOR CITY DOCUMENTS.

At a meeting held March 17, 1873, the Committee on Printing adopted the following —

"*Rules relating to City Documents not otherwise provided for by the City Council.*

1. The regular edition of City Documents to be 450 copies, without covers; 150 of them to be reserved for binding in volumes at the close of the year; this edition (of 450 copies) to be in charge of the City Messenger, subject to directions from the Chairman of the Printing Committee.

2. The first edition (450) of City Documents to be charged to the Appropriation for General Printing; additional copies or covers ordered to be charged to the Appropriations belonging to the Departments ordering the same.

3. In case Lithographic or similar work is required for any City Document, and extra copies are required, the charge to Appropriations for the extra Lithographic copies, etc., shall be pro rata of the whole cost of the same.

4. In case of any question arising whether a pamphlet shall be classed as a City Document, it shall be regarded as subject to that provision of Section 3, Document 53, 1871, relating to 'the form of the work.'"

CLASSIFICATION OF CITY PUBLICATIONS.

The following is a brief statement of the City Publications. The Books and Documents are placed in charge of the City Messenger, by whom they are distributed, or preserved with excellent system, convenient for ready access at any time. No special Library exists in City Hall available for general reference.

MANUAL OF THE CITY GOVERNMENT. — On the organization of the Government, and appointment of the Standing Committees, annually, a small pocket pamphlet is issued, containing names and residences of the members, the Committees, and the Rules and Orders of the City Council, and of both branches. It is distributed by the City Messenger.

CITY DOCUMENTS. — These are bound annually at the close of the year, three bulky volumes being now required for the Documents of the year. One hundred and fifty sets are bound, which are principally distributed to the City Council of the same year, and the Departments. Members of the City Council also receive copies of the Documents in numbers as printed.

The bound series of City Documents begins with the year 1834. A volume bearing on its title-page the date 1838, appears to contain an incomplete collection of preceding years dating back nearly to the founding of the City Government. An alphabetical "Index to the City Documents from 1834 to 1865," compiled with great care and labor by the Clerk of Committees, (Mr. Bugbee,) is bound in the Supplement to Laws and Ordinances, 1866. A new and revised edition of this alphabetical Index, to the present date, is in preparation. The City Messenger has Card Catalogues of the current Documents, in his office, available for inspection. The bound volumes are now indexed only by the titles of the consecutive Documents. An examination of the Volumes for the preceding year (or their Indexes) will generally show the character of the Documents of the current year, and the date of their issue.

MUNICIPAL REGISTER. — This Book is prepared annually by the City Clerk, and printed as soon as the appointment of city officers is completed in April or May, not being ready for distribution until June. It is also bound with the City Documents.

AUDITOR'S REPORT. — This important Document is issued soon after the close of the Financial Year, ending April 30, annually. An edition is issued for general circulation, copies of which are procurable at the Auditor's office, or at any Police Station. It is also bound with the City Documents.

LAWS AND ORDINANCES. — "*Ordinances and Rules and Orders of the City of Boston, together with the General and Special Statutes of the Massachusetts Legislature, relating to the City.*" 1869. This volume "contains (1) a digest of all the special statutes relating to the City of Boston, and such general statutes as were considered of municipal interest, arranged, as far as practicable, in alphabetical order; (2)

the revised ordinances of the City Council; (3) the revised rules and orders of the Board of Aldermen; (4) historical notes and copious references to judicial decisions."

Since 1869, an annual Supplement to the above volume is issued in pamphlet form.

CITY COUNCIL MINUTES. — These are printed from the newspaper type used in the Transcript reports of the City Government Proceedings, by contract, (250 copies.) The copies are distributed to the City Council and the Departments in the same manner as the City Documents, a part in current numbers, and a part in bound volumes. The annual volumes begin with 1869.

By order of the City Council, the Printing Committee have contracted for an alphabetical Index to the four volumes of this publication, which the compiler is now preparing, to be printed as soon as received.

JOURNAL OF THE COMMON COUNCIL. — This is issued in current parts to the members, and bound in volumes at the close of the year. Four hundred and fifty copies are printed and disposed of in the same manner as the City Documents.

SCHOOL COMMITTEE. — A Journal of Proceedings of the School Committee is issued in parts to the members of the Committee, and to masters and sub-masters of the Schools; and is bound in volumes at the close of the year. Three hundred copies are printed, and are in charge of the Secretary of the School Committee.

SHURTLEFF'S HISTORY OF BOSTON. — "*A Topographical and Historical Description of Boston. By Nathaniel B. Shurtleff. Boston. Printed by request of the City Council. 1871.*" The city owns the stereotype plates of this work, for supply of gratuitous copies; the author having the right of using them for supplying editions for sale. No written contract exists relative to the work. The order of the City Council, printed on the second leaf of the volume, presents the basis on which it was issued.

DRAKE'S HISTORY OF BOSTON. — "*The History and Antiquities of Boston, the Capital of Massachusetts and Metropolis of New England, from its Settlement in 1630, to the year 1770. Also, an Introductory History of the Discovery and Settlement of New England, with notes critical and illustrative. By Samuel G. Drake, A. M., Member of the Royal Society of Northern Antiquaries at Copenhagen, corresponding secretary of the New England Historical and Genealogical Society, honorary and corresponding member of the New Hampshire, Rhode Island, Connecticut, New York, Pennsylvania and Maryland Historical Societies, etc., etc. Boston: Published by Luther Stevens, 186 Washington Street, 1856.*"

One copy of this volume has been bought by the Committee on Printing, it being nearly out of the market.

The city has a pecuniary interest only in a proposed continuation of this work, by the same author. In consequence of a Memorial to the City Council, from a number of citizens, requesting the city to aid the author in issuing the continued History, the following order was passed: "City of Boston, In Board of Aldermen, May 27, 1872. Ordered, That the Committee on Printing be empowered to contract with Samuel G. Drake, Esq., or his authorized representatives, for rendering such assistance on the part of the city, toward a continuance of his History of Boston from 1770 to 1822, as the Committee may consider expedient, at an expense not exceding five thousand dollars, including the cost of copies for gratuitous disposal by the city, — the expense to be charged to the appropriation for Incidental Expenses."

In conformity with this order, the Committee made a written contract with Mr. Drake, dated July 1, 1872, providing that Mr. Drake "will supply copy for said History, in convenient instalments, to the Superintendent of Printing of said city, free of expense, for stereotyping;" and "the said City of Boston agrees to perform the work of stereotyping said history, at its own expense." By the contract, the plates become the property of the city, subject to its use for gratuitous copies, and to the author's use for editions for sale.

No instalment of copy on this work has yet been received by the Superintendent. The author has an accumulation of the requisite materials for the work, and a small part of it prepared; but his advanced age, and consequent infirm health, render it uncertain when the aid to be rendered by the city will become applicable by the completion of the work.

Other occasional Publications are issued by the city, not comprised in the preceding classification.

The Records of the Board of Aldermen, kept by the City Clerk, (not printed,) comprise full entries of all matters acted on by the Board, and are very voluminous.

PUBLIC LIBRARY ISSUES.

In addition to the publications stated in the preceding classified list, the following publications, Class Lists, and Catalogues, are issued by the Public Library. A full explanation of these publications appears on the Covers of the Class Lists, in the quarterly Bulletins of the Library, and in the Handbook for Readers. They may be procured at the Library.

(1.) *A Hand-book for Readers*, giving an extended account of the Catalogues, Rules and Regulations, etc.

(2.) *Superintendent's Monthly Report*, in sheet form, giving a condensed statistical account of the Library accretions, circulations, visitors, changes, etc.

(3.) *Printed Quarterly Bulletins*, giving list of books placed in the Library, or newly located, during the quarter, with a variety of information on the current Library topics.

(4.) *Bates Hall Indexes, Catalogues, etc.*, namely: —

(I.) *The Index of 1861.* (Includes the Bowditch Library.) Royal 8vo, 902 pages. Out of print for sale, but copies remain at the Library for use. This book is stereotyped, (plates at Library.)

(II.) *The Supplement of 1866.* (Includes the Parker Library.) Royal 8vo, 718 pages.

(III.) *The Catalogue of the Prince Library.* Royal 8vo, 160 pages. Stereotyped, (plates at Library.)

(IV.) *The Consolidated Bulletin*, (kept at the desk,) combines in one alphabet the titles contained in the twenty-six printed Bulletins which have been issued since October, 1867.

(V.) *Public Card Catalogue.* The printed cards, together with those in manuscript in the same drawers, show the books added to the Bates Hall since 1866. Those in print show also the books added to the Lower Hall since October 1, 1871.

(VI.) *The Official Card Catalogue*, which can be consulted, in cases of need, upon application, supplements the printed Index and Supplement.

(5.) *Lower Hall Indexes, Catalogues, etc.*, namely: —

(I.) *Fiction and Juveniles*, 5th edition, Aug. 1871, 76 pages.

(II.) *Arts, Sciences and Professions*, 2d edition, Sept. 1871, 71 pages.

(III.) *History, Biography, and Travels*, 2d edition, just issued, 304 pages.

(IV.) *French, German, and Italian Books*, 1st edition, Sept. 1867, 45 pages.

(V.) *Poetry, Drama, Collections, and Miscellanies*, 1st edition, August, 1870, 128 pages.

(VI.) *A Card Catalogue*, (in manuscript,) containing only the titles of works which have been added to the Lower Library since the issue of the various Class Lists, has been placed at the clerk's desk in the Distributing Hall.

(6.) *A List of Portraits in the Tosti Engravings.*

(7.) *A List of Periodicals*, currently received, nearly 800 in number.

(8.) *Finding Lists* of the Books in the East Boston, South Boston, and Roxbury Branches.

COMPILATIONS OF SAMPLES OF CITY PRINTING.

The system of the Superintendent is, a compilation of Samples for his office, in their numerical order as printed. An application has been made from the Public Library, for a sample copy of all printing done for the city, to be there classified by Departments using the same, and permanently retained in the Library. The supply of these samples by the Superintendent has been authorized by the Committee on Printing.

A Special Sample Book for specimens and notations respecting all Maps, Lithographs, Engravings, Seals, Electrotypes, Stereotyped Books, etc., has been commenced, to be permanently continued. The city has a property in the drawings on Lithographic Stones, which remain in establishments doing the printing, the stones being the property of the lithographers. A number of valuable Maps were destroyed by the great fire. By the compilation of this book, a number of Lithographs, and the plates of a valuable stereotyped book, have been discovered, stored in City Hall.

In view of the extension of the city limits, a complete and thorough system in this office, relating to the public printing, must certainly be of considerable incidental benefit, beyond the pecuniary saving it may effect. The members of the City Government coming annually from the people, require the most perfect practicable system to give them access to all information concerning city affairs, which they may have occasion to investigate. Whatever may tend to this desirable end, this department will endeavor to promote.

GEORGE COOLIDGE,
Superintendent of Printing.

City Document.—*No.* 115.

CITY OF BOSTON.

REPORT OF COMMITTEE

ON

REVISION OF CITY CHARTER.

In Board of Aldermen, Sept. 29, 1873.

Laid on the table and ordered to be printed.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Sept. 29, 1873.

The Committee on Ordinances, to whom was recommitted the report and order upon so much of the Mayor's Inaugural Address as related to a revision of the City Charter, have again considered the subject, and respectfully submit the following

REPORT.

A greater and more important increase in area and population than any which our city has yet experienced would seem to be undeniably imminent, and His Honor's recommendation in substance is that the machinery of our municipal government be subjected to a searching examination, by those whose ability and experience best fit them for the task, with a view of deciding where the increasing strain will probably be felt, and of suggesting what, if any, changes or modifications will best enable the same to be successfully borne.

The report embodying such suggestions, this committee understand is to be placed before the City Council for exactly such action or non-action thereon, in whole or in part, as we or our successors may think fit to take. We can deal with the same at our leisure and in detail — either directly, or through committees, standing or special, as we may decide; we can reject everything which fails to commend itself to our judgment, and no man can say us nay.

Why should we object to receive counsel from the greatest ability and experience which our city contains, reserving the right to follow just so much as seems good in our eyes? One argument against so doing may be stated thus : —

Why commit to outsiders the task of examining the working of our machinery of municipal government, of pointing out defects and suggesting present and prospective changes, while we, members of that government, by reason of our longer or shorter experience therein, can better perceive such defects or shortcomings, present or prospective, and better judge of the nature of the remedy which should be applied? Why, indeed, if this were so. But the committee cannot agree to the position. They cannot agree that, because we happen at this moment to be *of* the City Government, we are necessarily better judges of its merits and its failures ; that we necessarily know better where the shoe pinches than any persons, of whatever previous experience or acknowledged ability, who are now living *under* it.

They believe, on the contrary, that the municipal shoe often pinches in places where City Hall feels it last of all, and that past improvements have been, and future ones will be, suggested by exactly that class of outsiders from whom will be selected the persons of whom we now propose to ask advice. These commissioners must serve as did those on annexation, whose valuable report now lies before us, without compensation, and the expense will be, so far as we can see, comprised in the items of clerk-hire and stationery.

It is said, however, in substance, that the machine has run pretty well so far ; let us wait until something goes wrong, and then we can judge of the remedy and apply it. But an engineer who acted on this principle, instead of examining to see where the increasing strain would be felt and devising means to meet it beforehand, would be clearly unfit for his position. That an ounce of prevention is worth a pound of cure is a homely maxim.

To assume that we shall be in danger of making uncalled-for changes, and of abandoning known and tried systems which have worked well, on a mere suspicion of future inadequacy, seems to the committee something like self-stultification. Common sense would surely teach us to reject such advice, by whomsoever offered. If we have in a certain sense outgrown our city charter, it by no means follows that it is to be discarded in its entirety, like a garment, for the adoption of something strange and unknown in its stead. The commissioners, if men of sense, will recommend as few changes as possible, consistently with as good government for Boston of the future as has been enjoyed by Boston of the past; and if not men of sense, the committee have little fear that their recommendations will be adopted.

Nor can the committee agree that by the appointment of this commission we are in any sense avoiding our own work. It is one thing to shirk and transfer to others labor which our constituents expect us to perform, in consideration of the honor of the offices which we hold; it is another thing to accept counsel and assistance from the highest sources to aid, not to supplant, our own judgment in important alterations in our form of government. The committee are willing that the public should decide as to the purpose of this order.

It will be observed that the order contemplates an examination of the City Charter *and subsequent legislation*. Perhaps some members of the government do not realize how much of this there is, and how difficult it is at the present day to decide, without going to a lawyer, in what state the actual powers and functions of various bodies or officials really are left by the effect of such subsequent legislation and judicial decisions bearing thereon. Some powers are given directly, as the Mayor's power to remove policemen; some are decided to exist by implication, as has been a like power of removing firemen. The question of how much power remains to the aldermen as surveyors of highways, since the act appointing the street commission, is one which we must ask a lawyer to answer. And so in regard to much other legislation which has been obtained at the State House, from time to time, by various parties, *in pursuance of no settled policy*, but just as the desirability of this or that change happened to strike different persons. Sometimes the change has been petitioned for by the City Council; sometimes by individuals; sometimes, as happened last winter in relation to the sewers and paving committees, by members of the Legislature itself. Sometimes petitioners have obtained what they asked for, and that of which they may be supposed to know the effect; sometimes, in the wisdom of the State House, something very different, which may cut in an unexpected direction, and on which lawyers must again be consulted.

Now the committee submit that if these commissioners suggest no changes which we decide to adopt, yet if the result of their examination of this mass of legislation shall be its codification into one instrument, which shall show, under appropriate heads, the various powers and functions of the government, under existing laws and decisions, they will have given us something worth many hundred times the money which we propose to spend.

But is it true that no existing defects and probable remedies have been suggested for this commission to consider? It seems to the majority of your committee, that from time to time there have been a good many. In the first place, the subject of longer terms of office has been before the Council many times within the last dozen years. In 1860, '62, '64 and '65, joint special committees reported strongly in favor of an increase of the tenure of office, for both branches and for the Mayor. The committee appointed on the same subject, in 1868, tell us, in their report, that these recommendations failed, not from objection to the increased tenure, but from disagreement upon minor points, which delayed matters until the Legislature adjourned. And it seems that their own report, which embodied the same and other important alterations in the charter, met a similar fate; the order was passed and the petition duly presented, but, owing to the illness of a senator, it was pigeon-holed until too late for action, and went over.

Another subject is that of a Metropolitan Board of Works: whether, when the anticipated increase of area and population comes upon us, we shall be able to undertake the increased labor without the assistance of some such body. His Honor the Mayor has also strongly expressed his opinion that the incumbent of his office should be, in some manner, relieved from the duty of making the police appointments, which now occupies by far an undue proportion of his time. Then, again, it has been questioned, whether it would not be an advantage to still further separate the functions of the Mayor and the Board of Aldermen, abandoning the analogy of town governments, and following out that of larger bodies politic, where the executive has no place in the legislative branch, and committees are appointed by the presiding officers, whom the legislators elect from their own number.

These are a few of the points on which it seems to the majority of the committee, that the opinion and suggestions of such a commission as is proposed, would be of value to us, and we think the public will understand why it is that in such important matters we do not disdain asking advice and counsel to aid in guiding and forming our own judgment. The committee recommend the passage of the accompanying order.

For the Committee,

SAMUEL M. QUINCY, *Chairman.*

Ordered, That His Honor the Mayor be requested to appoint a commission, consisting of five persons, to examine the act incorporating the City of Boston, and all other general or special statutes now in force, concerning the government of the city, and report to the City Council what, if any, changes are or will become necessary or expedient, in view of the prospective increase in the area and population of the city; the expense attending such examination and report to be charged to the appropriation for Incidentals.

MINORITY REPORT.

CITY OF BOSTON.

MINORITY REPORT

OF THE COMMITTEE ON ORDINANCES, UPON THAT PART OF THE MAYOR'S ADDRESS WHICH RELATES TO A REVISION OF THE CITY CHARTER.

The portion of the Mayor's address referred to reads as follows: —

"REVISION OF THE CHARTER.

"I feel called upon to direct your attention to the City Charter and the modes of municipal administration which have been evolved from it. The charter was drawn by the late Chief Justice Shaw, and has justly been regarded as a monument of the wisdom for which he was distinguished at home and abroad. It served its purposes well through many years, and has been a model after which city governments in our own Commonwealth and elsewhere have been fashioned. But it is the work of fifty years ago, when the territory, population and interests in which it operated were small in comparison with those of to-day. It remains now as it was originally adopted, with the exception of the alterations made in the year 1854, and subsequently, which have not changed its general features, or enlarged its capacity, in any considerable degree. It must be obvious to all who are conversant with its provisions and the practical administration of city affairs, that if we have not already outgrown its proportions, it must soon fail to meet the requirements of our rapidly increasing population and multiplying interests. I commend, therefore, to you consideration, the expediency of a revision of the City Charter, with a view to its better adaptation to our present and future wants. If these views meet with your favor, I recommend that a commission be constituted, to be composed of able and discreet persons, familiar with the operations of the existing city institutions, whose duty it shall be, after mature consideration of the whole subject, to report a draft of a charter for your examination and action."

It could not be expected that the committee should report in favor of the appointment of a commission to revise the charter written by the late Chief Justice Shaw, and under whose provisions the city had grown and prospered, without being informed in what respect it is deficient; in what respect it has " outgrown its proportions," and in what respect it " must soon fail to meet the requirements of our rapidly increasing population and multiplying interests." There should appear some good reason, some loud call for so important a measure.

The committee not being able to discover any such reason, and anxious to give full consideration to the subject, and desiring to accede to the suggestion of His Honor the Mayor, waited upon him by a sub-committee. His Honor, however, was pleased to inform the committee that there was no particular feature of the charter which had occurred to him as requiring change, but that it had occurred to him that, perhaps, owing to the increasing size of the city, it might be well to revise the charter.

The Mayor had another interview with the committee, but though informed of the desire of the committee carefully to consider any reason in favor of the measure which he could suggest, the committee was not favored with any recommendations.

The question, then, is this: Shall we send to commissioners for revision, our charter, of which we have been justly so proud, without having discovered in it any imperfections or defects? Is it worth while to move at all, without having some reason therefor?

The charter makes the inhabitants of Boston a corporation, and defines its powers. Its government is made to consist of a Mayor, Board of Aldermen, and the Common Council. The charter provides for their election. It also provides proceedings in case there is no choice at elections, and for the filling of vacancies. It also provides for election of City Clerk, Clerk of the Common Council, and for the choice of its presiding officers. It provides for the election of Ward Officers, the choice of Assessors, the Collection of Taxes, a Board of Health, Surveyor of Highways, a City Treasurer, Overseers of the Poor, and a School Committee.

Nearly all the other provisions of law, affecting the city and the powers of its officers, are contained in general statutes, most of which are applicable to all the cities of the Commonwealth.

The charter contains little else than the requisite provisions for the organization and working of the corporation.

These provisions are as applicable to the city of three hundred thousand inhabitants, as to a city of thirty thousand. The undersigned do not see that it has outgrown, nor how it can outgrow, its proportions. It is a form of government well suited to municipal corporations of great size, and was especially adopted for that reason.

Without the suggestion of weighty reasons therefor, the undersigned cannot agree with the majority of the committee, and recommend the appointment of a commission to revise the City Charter.

L. R. CUTTER,
BENJ. DEAN,
T. J. DACEY.

City Document.—*No.* 116.

CITY OF BOSTON.

AUDITOR'S MONTHLY EXHIBIT.

OCTOBER 3, 1873.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1873-74.

MONTHLY EXHIBIT.

Office of the Auditor of Accounts,
City Hall, October 3, 1873.

To the Honorable City Council:

Gentlemen, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1873–74, as shown in the books in his office, October 1, 1873, including the October draft, being six months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,
Auditor of Accounts.

GENERAL APPROPRIATIONS.

Object of Appropriations.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Advertising	$6,000 00	$1,124 54	$4,875 46
Annuities	512 00	245 00	267 00
Armories	22,000 00	8,756 08	13,243 92
Board of Health	86,274 00	39,537 71	46,736 29
Boston Harbor	10,000 00	2,042 11	7,957 89
Bridges	*32,000 00	19,887 57	12,112 43
Cedar Grove Cemetery Add Revenue rec'd, $8,398 16	3,000 00	11,026 19	371 97
Cemeteries	15,700 00	6,956 58	8,743 42
Charles River and Warren Bridges	7,000 00	2,816 46	4,183 54
Chestnut Hill Driveway	5,000 00	5,000 00	. . . .
City Hospital	110,000 00	60,399 93	49,600 07
Common, Public Squares, etc.	80,000 00	73,905 61	6,094 39
Contingent Funds, viz.:			
Joint Com'i'tees of the City Council	4,000 00	852 05	3,147 95
Mayor	1,500 00	35 00	1,465 00
Board of Aldermen	1,500 00	808 05	691 95
Common Council	3,000 00	1,695 50	1,304 50
County of Suffolk	325,000 00	142,466 53	182,533 47
East Boston Ferries	290,000 00	163,899 70	126,100 30
Engineer's Department	24,000 00	11,376 07	12,623 93
Fire Alarms and Bells and Clocks	50,940 00	22,746 58	28,193 42
Fire Department	551,316 00	326,581 36	224,734 64
Grammar School House, L street	†41,338 55	40,038 59	1,299 96
Health Department	383,550 00	193,073 71	190,476 29
Incidental Expenses	87,000 00	23,518 37	63,481 63
Inspection of Buildings	16,800 00	10,613 17	6,186 83
Interest and Premium	1,695,000 00	449,016 33	1,245,983 67
Lamps	390,000 00	159,296 76	230,703 24
Markets	10,000 00	10,066 81	($66 81 to be prov'd for.)
Militia Bounty	45,000 00	5,163 00	39,837 00
Mount Hope Cemetery Add Revenue rec'd, $18,526 41	15,000 00	25,838 59	7,687 82
Overseers of the Poor	73,400 00	27,603 74	45,796 26
Old Claims	1,500 00	442 70	1,057 30
Paving, etc.	1,000,000 00	615,886 30	384,113 70
Police	700,000 00	335,509 84	364,490 16
Printing and Stationery	35,000 00	21,344 51	13,655 49
Public Baths	40,000 00	27,517 33	12,482 67
Public Buildings	92,000 00	63,568 95	28,431 05
Public Institutions, viz.:			
House of Industry	180,000 00	95,376 82	84,623 18
House of Correction	90,500 00	56,502 13	33,997 87
Lunatic Hospital	60,000 00	29,077 09	30,922 91
Pauper Expenses	31,500 00	10,591 07	20,908 93
Steamboat "Henry Morrison"	16,000 00	10,691 93	5,308 07
Office Expenses	8,000 00	3,504 63	4,495 37
Public Lands	6,000 00	1,781 31	4,218 69
Public Library	‡115,197 28	80,126 85	35,070 43
Quarantine Department	19,250 00	11,167 16	8,082 84
Registration of Voters and Election Expenses	20,000 00	686 47	19,313 53
Carried forward	$6,800,777 83	$3,210,162 78	$3,617,606 43

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* $4,000 of this amount brought from last year.
† $26,338 55 of this amount brought from last year.
‡ $25,197 28 of this amount brought from last year.

Object of Appropriations.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Brought forward . . .	$6,800,777 83	$3,210,162 78	$3,617,606 43
Reserved Fund	300,000 00	63,100 00	236,900 00
Salaries	166,000 00	97,439 22	68,560 78
Schools and School-houses, viz.:			
School Instructors . . .	1,024,875 00	470,015 01	554,859 99
School expenses, School Committee	86,750 00	59,306 77	27,443 23
Salaries officers, School Committee	24,500 00	12,168 84	12,331 16
School-houses, Public Buildings	255,000 00	135,835 49	119,164 51
Sealers of Weights and Measures .	7,000 00	3,553 70	3,446 30
Sewers	200,000 00	163,405 49	36,594 51
Sinking Fund Commissioners .	2,800 00	1,350 00	1,450 00
State Tax	736,480 00	. . . . . .	736,480 00
Surveyor's Department . . .	40,000 00	18,822 71	21,177 29
Water Works	336,500 00	217,020 26	119,479 74
Water Works, Interest and Premium	653,000 00	64,579 99	588,420 01
West Boston and Cragie's Bridges	*88,832 23	5,208 92	83,623 31
Widening Streets	300,000 00	131,546 96	168,453 04
		$4,653,516 14	$6,395,990 30
Total Appropriations, $10,932,147 00		Less to be provided for	66 81
Balances from 1872–3, 90,368 06	$11,022,515 06		$6,395,923 49
Add Revenue,	26,924 57		
	$11,049,439 63		

* $34,832 23 of this amount brought from last year.

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General . . .	$11,049,439 63	$4,653,516 14	$6,395,923 49
Special . . .	9,218,372 21	4,051,354 36	5,167,017 85
	$20,267,811 84	$8,704,870 50	$11,562,941 34

SPECIAL APPROPRIATIONS.

[Under this head, the appropriations are the balances brought from the last financial year, and appropriations made the present financial year.]

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Addition to Engine House No. 16, (reserved fund)	$18,000 00	$5,428 32	$12,571 68
Additional Supply of Water (transfer and loans)	546,418 36	18,839 10	527,579 26
Appleton Street Extension (loan)	2,938 10	......	2,938 10
Atlantic Avenue (loans)	203,516 22	72,022 04	131,494 18
Broadway Extension (loans)	80,680 21	......	80,680 21
Burnt District (loans)	3,892,516 28	2,094,701 62	1,797,814 66
Canton Street Grading (loan)	33,225 20	......	33,225 20
Chelsea Street Bridge (loan)	23,000 00	17,094 52	5,905 48
Church Street District (loans)	21,415 32	21,587 48	($172 16 to be provided for,)
Coal Sheds, Deer Island (appropriation)	15,000 00	14,991 13	8 87
Columbus Avenue Extension (loans)	362,750 00	325,000 00	37,750 00
Devonshire Street Extension (loan)	113,544 00	63,864 67	49,679 33
Engine and Hook and Ladder House Ward 5 (loans)	65,000 00	16,833 13	48,166 87
Engine House, Mason Street (transfer)	15,000 00	......	15,000 00
Engine House No. 12 (loans)	19,687 51	16,829 80	2,857 71
Engine House, Ward 14 (transfer and loan)	22,898 95	16,314 55	6,584 40
Fort Hill Improvement (loans)	116,417 77	7,819 80	108,597 97
Fort Hill Wharf (loan)	110,000 00	......	110,000 00
Grading Madison Square (transfers)	3,015 96	3,015 96	......
Grammar School House, Atherton District (loan)	22,861 10	20,236 72	2,624 38
Grammar School House, Dudley District (loan)	110,000 00	14,112 85	95,887 15
Grammar School House Ward 15 (loan)	105,000 00	13,588 80	91,411 20
Harrison Avenue Extension (loan)	58,970 91	12,860 44	46,110 47
Highland Street Stable (loan)	85,000 00	7,163 38	77,836 62
Home for Poor, Deer Island (transfer)	225,000 00	......	225,000 00
Hook and Ladder House No. 4, (reserved fund)	12,000 00	11,391 00	609 00
Hose House, Longwood (loan)	28,000 00	5,750 00	22,250 00
Hose House, South Boston (transfer)	7,182 11	7,146 28	35 83
Mather School House, Ward 16 (loan)	46,784 16	46,356 49	427 67
Memorial Monument, Boston Common (transfer)	75,000 00	......	75,000 00
New Lunatic Hospital (loan and appropriation)	103,655 62	......	103,655 62
Parker Hill Reservoir (loan)	161,000 00	1,256 08	159,743 92
Police Station House No. 11 (transfer)	7,500 00	7,500 00	......
Police Station House, South Boston (loan)	45,000 00	84 83	44,915 17
Primary School Houses, East Boston	80,000 00	14,299 44	65,700 56
Primary School House Lot, Ward 14 (reserved fund)	10,000 00	9,383 50	616 50
Primary School House, Newbury Street (loan)	40,000 00	......	40,000 00
Primary School House, Ward 9 (loan)	60,000 00	59,080 00	920 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	......	10,000 00
Small-pox Hospital (loan)	37,512 46	1,524 50	35,987 96
Soldiers' Relief (revenue)	151,115 48	33,991 95	117,123 53
South Market Street Extension (loan and transfer)	31,915 53	17,000 56	14,914 97
Station House, District No. 11 (loan)	40,000 00	......	40,000 00
Suffolk Street District (loans)	326,933 79	288,505 29	38,428 50
Ticknor Bequest (transfer)	2,060 51	......	2,060 51
Washington Street Extension (loan)	1,025.328 00	600,650 00	424,678 00
Water Street Grade Damages (transfer)	15,546 17	......	15,546 17
Water Works Wards 13, 14, 15 and 16 (loan)	115,000 00	83,875 98	31,124 02
Widening and Grading Dudley and other Streets (loan)	10,823 50	2,570 95	8,252 55
Widening Eliot Street (loan and transfer)	13,458 99	......	13,458 99
Widening Federal Street (loans)	1,103 03	......	1,103 03
Widening Federal Street Bridge (loan and transfer)	9,287 76	8,745 00	542 76
Widening Hanover Street (loans)	41,127 92	......	41,127 92
Widening Hanover Street, No. 2 (loans)	62,146 81	11,200 00	50,946 81
Widening Kingston Street (loan)	59,535 81	......	59,535 81
Widening Kneeland Street (loan)	4,564 67	77 48	4,487 19
Widening Warren Street (loan)	62,934 00	7,739 72	55,194 28
Widening Washington and Essex Streets (loan)	250,000 00	70,921 00	179,079 00
	$9,218,372 21	$4,051,354 36	$5,167,190 01
		Less to be provided for	172 16
			$5,167,017 85

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1873.

Total Appropriations and Expenditures for Each.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the October draft.

Object of Appropriations.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans)	$610,000 00	$82,420 74	$527,579 26
Appleton Street Extension (loan)	100,000 00	97,061 90	2,938 10
Atlantic Avenue (loans) . .	1,600,000 00	1,468,505 82	131,494 18
Broadway Extension (loans) .	1,000,000 00	919,319 79	80,680 21
Burnt District (loan) . . .	5,000,000 00	3,202,185 34	1,797,814 66
Canton Street Grading (loan) .	150,000 00	116,774 80	33,225 20
Church Street District (loans) .	1,175,000 00	1,175,172 16	($172.16 to be prov'd for.)
Columbus Avenue Extension (l'ns)	515,000 00	477,250 00	37,750 00
Devonshire Street Extension (loan)	510,000 00	460,320 67	49,679 33
Engine House No. 12 (loans) .	31,000 00	28,142 29	2,857 71
Engine House W'd 14 (tran. & l'n)	30,000 00	23,415 60	6,584 40
Fort Hill Improvement (loans) .	1,575,000 00	1,466,402 03	108,597 97
Grading Madison Square (transfers)	12,158 49	12,158 49	. . . .
Grammar School House Atherton District (loan)	50,000 00	47,375 62	2,624 38
Grammar School House L Street (loan and appropriation) . .	105,000 00	103,700 04	1,299 96
Harrison Avenue Extension (loan)	220,000 00	173,889 53	46,110 47
Hose House, So. Boston (transfer)	23,000 00	22,964 17	35 83
Mather School House, W'd.16 (loan)	65,000 00	64,572 33	427 67
New Lunatic Hospital (loan and appropriation)	148,000 00	44,344 38	103,655 62
Oliver Street , . . .	187,114 05	352,895 17	($165,781.12 advanced by Treasurer.)
South Market Street Extension (loan and transfer)	333,000 00	318,085 03	14,914 97
Suffolk Street District (loans) .	2,381,248 96	2,342,820 46	38,428 50
Washington St. Extension (loan)	1,500,000 00	1,075,322 00	424,678 00
Water Street Grade Damages (tr'n)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley and other Streets (loans) . .	180,000 00	171,747 45	8,252 55
Widening Eliot Street (l'n and tr'n)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Federal St. Bridge (loan and transfer)	90,584 25	90,041 49	542 76
Widening Hanover Street (loans)	725,000 00	683,872 08	41,127 92
Widening Hanover St., No. 2 (l'ns)	820,000 00	769,053 19	50,946 81
Widening Kingston Street (loan)	225,000 00	165,464 19	59,535 81
Widening Kneeland Street (loan)	150,000 00	145,512 81	4,487 19
Widening Warren Street (loan)	115,000 00	59,805 72	55,194 28
	$20,441,105 75	$16,945,487 10	$3,661,571 93
Advanced by Treasurer . .	165,781 12	Less to be provided for	172 16
	$20,606,886 87		$3,661,399 77

City Document.—No. 117.

CITY OF BOSTON.

AN ORDINANCE

IN RELATION TO THE

FIRE DEPARTMENT.

IN BOARD OF ALDERMEN, Oct. 6, 1873.

Assigned for consideration on October 9, at 4 o'clock, P. M.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Oct. 6, 1873.

Alderman Stebbins moves to amend the ordinance in relation to the Fire Department passed by the Common Council (City Doc. 109, *amended*), by the substitution therefor of the following ordinance.

Alderman Quincy moves to amend the following ordinance by "striking out all *after* the ordaining clause, and substituting in the place thereof, the sections, in their order, of the ordinance (City Doc. 97) reported by the Joint Special Committee on the reorganization of the Fire Department."

AN ORDINANCE IN RELATION TO THE FIRE DEPARTMENT.

Be it ordained by the Aldermen and Common Council of the City of Boston, in City Council assembled, as follows: —

SECTION 1. The Fire Department of the City of Boston shall consist of a Board of seven Directors, a Chief Engineer, a First Assistant Engineer, nine District Engineers, a Superintendent of Fire Alarms, and as many foremen, enginemen, hosemen, hook-and-ladder men, telegraph operators and other persons as the City Council may from time to time deem necessary for the public service.

SECT. 2. There shall be appointed annually in the month of January a Joint Committee of the City Council on the Fire Department, consisting of two aldermen and three councilmen. It shall be the duty of said committee to examine, as often as once in each month, the records and accounts of the Board of Directors and the Board of Engineers of the Fire Department; and also to examine all applications for appropriations for the Fire Department, and report thereon to the City Council.

SECT. 3. In the month of November, in the year one thousand eight hundred and seventy-three, or as soon thereafter as may be, the City Council shall elect by concurrent vote of the two branches, one member of the Board of Aldermen and two members of the Common Council, to be members of the said Board of Directors of the Fire Department, and to hold office during the remainder of the municipal year, and until others are elected in their place, unless they are sooner removed.

In the month of January, in the year one thousand eight hundred and seventy-four, and annually afterwards, in said month, the City Council shall elect by concurrent vote of the two branches, one member of the Board of Aldermen and two members of the Common Council, to hold office as members of said board during the remainder of the municipal year in which they are elected, and until others are elected in their place, unless they are sooner removed.

In the month of November, in the year one thousand eight hundred and seventy-three, or as soon thereafter as may be, the Mayor shall appoint, subject to the approval and confirmation of the City Council, four persons, one of whom shall be a member of the Board of Underwriters of Boston, who, with the three members of the City Council elected, as hereinbefore provided, shall constitute the Board of Directors of the Fire Department. No member of the City Council shall be eligible to appointment by the Mayor on said board. Two of the persons appointed by the Mayor shall be appointed to hold their office until the first Monday in May, in the year one thousand eight hundred and seventy-five, and two until the first Monday in May, in the year one thousand eight hundred and seventy-six. In the month of April, in the year one thousand eight hundred and seventy-five, and thereafterwards annually in the month of April, the Mayor shall appoint, subject to like confirmation and approval, two persons, not members of the City Council, to be members of said Board of Directors for the term of two years from the first Monday of the following May.

Any member of said board elected from the City Council shall, at any time, be subject to removal by the City Council for cause; and any member appointed by the Mayor shall, at any time, be subject to removal by the Mayor for cause. All vacancies occurring in said board, from any cause, shall be filled in the same manner in which the original appointments are herein directed to be made. A majority of the whole board shall be necessary to constitute a quorum for the transaction of business.

SECT. 4. The said board shall organize forthwith, upon the first appointment of its members, and thereafterwards annually on the first Monday of May, by the choice of one of their members as chairman. They shall also choose a clerk, who shall not be a member of the board; and they shall make such rules and regulations for their own government and for the government of all other officers and members of the Fire Department, including the fire-alarm telegraph, as they may deem expedient, provided that said rules and regulations shall not be inconsistent with the ordinances of the city. Except where otherwise provided, the said board shall have the care and management of the Fire Department, and shall be responsible for its efficiency.

SECT. 5. The said Board of Directors shall annually, on or before the fifteenth day of February, send to the City Auditor an estimate in detail of the appropriations required for the maintenance of the Fire Department during the next financial year. All bills for expenditures from the appropriations for the Fire Department shall be drawn for by the said board, examined by the Auditor, and approved by the Committee on Accounts, before they are paid by the Treasurer. The said board may fix the compensation of their clerk, and the compensation of other members of the department not otherwise provided for; but the expenditures of said board shall in no case exceed the appropriations made from time to time by the City Council for the enlargement or maintenance of the department.

SECT. 6. The said board shall, on or before the tenth day of each month, present to the City Council a report, made up to and including the last day of the preceding month, containing a chronological statement of the number of fires in such month, with the causes thereof, a general description of the property destroyed or injured at each fire, with the names of the owners or occupants and the amount of insurance, if any, specifying the portion of the force and apparatus called into action at each fire, with the name of the officer in command, also a statement of all fatal or serious accidents to members of the department or others on account of fires or alarms of fire during the month, together with such other information or suggestion as they may deem proper. They shall also, annually, in the month of May or June, present to the City Council a report made up to and including the thirtieth day of the preceding April, containing, in addition to a consolidated statement of the facts contained in the monthly reports of the preceding year, a list of the causes of fire, alphabetically arranged, a statement of the income and expenditures on account of the department during the preceding year, a schedule of all the property belonging to the department, with a statement as to its condition on the date of the report, and an estimate of its value, also a statement of the number and location of the fire-alarm boxes; together with such other information or suggestions as they may deem proper.

Sect. 7. As soon as may be after the first organization of the Board of Directors of the Fire Department, as hereinbefore provided, and annually afterward in the month of April, the Mayor shall appoint, subject to the approval of the said Board of Directors, a Chief Engineer and a First Assistant Engineer of the Fire Department, to hold office until the first Monday in May in the year next ensuing, and until their successors are appointed or they are removed, and either or both of them may be removed at any time at the pleasure of the Mayor; and vacancies from any cause shall be filled in the same manner in which the original appointments are herein directed to be made. The said Chief and First Assistant shall perform such duties in addition to those hereinafter designated, keep such records and make such reports as the said board may direct. For their services they shall receive such compensation as the City Council may from time to time determine.

SECT. 8. The Chief Engineer shall have the sole command at fires over all other engineers, and all officers and members of the Fire Department, and all other persons who may be present at fires, and shall direct all proper measures for the extinguishment of fires, protection of property, preservation of order, and observance of the laws, ordinances and regulations respecting fires; and it shall be the duty of said Chief Engineer to examine into the condition of the engines and all other fire apparatus, and the houses connected therewith; and of the engine and other houses belonging to the city and used for the purposes of the Fire Department; and of the companies attached to the said department, as often as circumstances may render it expedient, or whenever directed so to do by the Board of Directors.

SECT. 9. In the absence of the Chief Engineer, the First Assistant Engineer shall perform the duties of the office, and shall have full authority as chief officer for the time being; and whenever the engines or other apparatus used in the department, except the fire-alarm telegraph, require alterations, additions or repairs, the said First Assistant shall, under the instructions of the Board of Directors, cause the same to be made.

SECT. 10. As soon as may be after his first appointment under this ordinance, and thereafterwards annually in the month of May, the Chief Engineer shall appoint, subject to the approval of the Board of Directors, nine District Engineers, of whom two shall be residents of East Boston, one of South Boston, one of the Roxbury District, and one of the Dorchester District. The said District Engineers shall hold office until their successors are appointed, or they are removed, and either one or all of them may be removed at any time at the option of the Board of Directors; and vacancies from any cause shall be filled in the same manner in which the original appointments are herein directed to be made. For their services they shall receive such compensation as the City Council may from time to time determine.

Sect. 11. The Chief Engineer, the First Assistant Engineer, and the District Engineers shall constitute the Board of Engineers of the City of Boston. The Chief Engineer shall preside at all meetings of the board at which he is present. In his absence the First Assistant Engineer shall preside; and in the absence of the Chief and First Assistant, a temporary chairman shall be elected by ballot. A majority of the whole board shall be necessary to constitute a quorum for the transaction of business. The said engineers may make such rules and regulations for their own government and in relation to the various matters under their control as they may deem expedient, subject however to the approval of the Board of Directors.

Sect. 12. The said Board of Engineers shall, at their first meeting after appointment under this ordinance, and thereafterwards annually on the first Monday in May, choose a secretary who shall hold his office until the first Monday in May of the year next ensuing, unless sooner removed, and he may be removed at any time at the pleasure of the Board of Engineers, and a vacancy from any cause may be filled in the same manner in which the original appointment is made. For his services he shall receive such compensation as the City Council may from time to time determine.

Sect. 13. The said secretary to the Board of Engineers shall keep a full and complete record of the acts of said board, and shall perform such other duties as said Board of Engineers and the Board of Directors may designate. He shall keep an account of the appropriations made by the City Council for the use of the Fire Department, and of the expenditures on account of the same; and shall compare his account monthly with the Auditor's books, and see that the expenditures of the Fire Department do not at any time exceed the amount of the appropriations at its disposal. He shall also keep a separate account of the expenses of each engine, hose carriage, and hook-and-ladder carriage, and of the horses, furniture and apparatus thereto belonging, and all other incidental expenses; and shall present to the Board of Directors, monthly, a full and detailed statement thereof.

SECT. 14. The Board of Engineers shall be responsible for the discipline and good order of all subordinate members of the department, except those connected with the Fire Alarm Telegraph office. They shall have control of all the officers and members of the several companies attached to the Fire Department, and all persons present at fires; and also of all the engine and other houses used for the purposes of the department, and all the engines, hose carriages, hook-and-ladder carriages, extinguishers, horses, furniture and apparatus thereto belonging.

SECT. 15. The said engineers, whenever a fire breaks out in the section of the city to which they are assigned for duty, shall immediately repair to the place of such fire, wearing such badge of office as the Board of Directors may designate; they shall take proper measures that the several engines and other apparatus be arranged in the most advantageous situations, and duly worked for the speedy and effectual extinguishment of the fire; they shall require and compel assistance from all persons, as well members of the Fire Department as others, in extinguishing the fire, pulling down or demolishing any house or building, if occasion require, in suppressing all tumults and disorders, removing furniture, goods, or other merchandise from any building on fire, or in danger thereof, and shall appoint stewards to secure the same. They shall also cause order to be preserved in going to, working at, or returning from fires, and at all other times when companies attached to the department are on duty. The assistant engineers shall report their absences from fires to the secretary at the regular meetings of the board, with the reasons therefor, and he shall keep a record of the same, and once in every month, and oftener if required, make a report thereof, stating all the facts to the Board of Directors.

Sect. 16. The engineers shall report to the Board of Directors the name of every person, not a member of either of said companies, who may, contrary to law, refuse or neglect to obey any orders of an engineer, given at any fire.

Sect. 17. The engineer in command at a fire shall have the power to adjudge upon the necessity of pulling down and demolishing buildings to prevent the spreading of fires, and have authority to pull them down and destroy them accordingly.

Sect. 18. The engineers shall inquire for and examine into, all shops and other places where shavings or other such combustible materials are collected or deposited, and report at the regular meeting of the board the condition in this respect of the district to which they are assigned; and whenever, in the opinion of any two of them, the same may endanger the security of the city from fires, they shall direct the tenant or occupant of said shops or other places to remove such shavings or other combustible materials; and in case of such tenant's or occupant's neglect or refusal so to do, they shall cause the same to be removed at the expense of such tenant or occupant, who shall, in addition, be liable to a penalty of not less than two, nor more than fifty dollars for such neglect or refusal; any person who shall obstruct the engineers, or any of them, in carrying out the provisions of this section, shall also be liable to a penalty of not less than two nor more than fifty dollars.

Sect. 19. The power of making and establishing rules and regulations for the transportation and keeping of gunpowder within the City of Boston, and of granting of licenses for keeping and sale thereof in the city, according to the provisions of an act entitled, "An act for further regulating the storage and safe-keeping, and transportation of gunpowder in the City of Boston," and of any other act or acts on the same subject, shall be exercised and performed by the Board of Engineers, and the power and duty of seizing any gunpowder kept or being within the city or harbor, contrary to the provisions of the said act or acts, shall be exercised and performed by the said engineers, or any of them; and in case of any seizure being made by any engineer other than the Chief, he shall forthwith report the same to the Chief Engineer, and the Chief Engineer shall cause all gunpowder, which may have been seized as aforesaid, to be libelled and prosecuted in the manner prescribed in the said acts; and all other powers and duties granted and enjoined in and by the said act or acts shall be performed by the said Chief or one of the other engineers.

SECT. 20. All moneys received for fines, forfeitures and penalties, arising under this ordinance or the laws of this Commonwealth regulating the storage and transportation of gunpowder, or the erection of buildings within the City of Boston, or the prevention and extinguishment of fire, unless it is by such laws otherwise specially provided, shall be paid into the treasury of the city, to be applied in such way as is provided in the acts of the Commonwealth.

SECT. 21. No license shall be granted by the said Board of Engineers for the sale of fireworks within the City of Boston, without the approval of the Board of Directors.

SECT. 22. The regular officers and members of the several engine, hose, hook-and-ladder and extinguisher companies and the insurance brigade, in service at the time this ordinance is passed, shall continue to hold the positions to which they were severally appointed by the Mayor and Aldermen, and to receive the compensation heretofore established by the City Council, until removed by the Board of Directors. And whenever vacancies occur from any cause in any companies at present organized, and whenever any increase of the force is authorized by order of the City Council, the Board of Engineers shall appoint, subject to the approval of the Board of Directors, suitable persons to fill the places created or made vacant. The compensation of the officers and members of companies shall be fixed from time to time by the City Council.

Sect. 23. The Board of Engineers shall report from time to time to the Board of Directors the names of such subordinate officers and members of the department as in their judgment should be removed, with their reasons therefor. Any member of the Fire Department, except the Chief and First Assistant Engineer, the Secretary to the Board of Engineers, and the Superintendent of Fire Alarms, may be at any time removed or dismissed by the Board of Directors, or deposed from any office that he may hold therein. No company shall have power to appoint or discharge any officer or member.

Sect. 24. No person under twenty-one years of age, and no person who is not a legal voter in the City of Boston, shall be an officer or member of the Fire Department.

Sect. 25. Every subordinate officer, and every member of the Fire Department shall sign the following agreement, to be deposited with the Board of Engineers: "I A. B., having been appointed a member of the Boston Fire Department, hereby signify my agreement to abide by all the ordinances of the City Council, and the rules and regulations of the Board of Directors and of the Board of Engineers relating thereto." And any officer or member who shall neglect or refuse to sign the same shall not be entitled to any compensation whatsoever.

Sect. 26. The officers and members of the Fire Department shall be paid monthly, except when otherwise ordered by the City Council; and, except in case of sickness, death, or removal from the city, every officer or member thereof who shall not serve the whole of the month, or who shall be removed from the department or deposed from his office for cause, shall forfeit any and all compensation that would otherwise have been due to him at the time when such service ceased, or such deposing or removal took place.

SECT. 27. Every person who shall have served according to law in the Fire Department for seven successive years, shall be entitled to receive a certificate thereof, signed by the Mayor; and all persons who shall receive said certificate shall be entitled to wear the badge of the department, and to do duty therein, when desired so to do by the Board of Directors.

SECT. 28. Whenever any person has received a certificate of appointment to any office under this ordinance, he shall be thereby immediately invested with all the authority conferred, and subject to all the duties imposed by the laws, the city ordinances, and the rules and regulations of the Fire Department; and whenever a vacancy occurs in the department, the same shall be filled as soon as conveniently may be.

SECT. 29. The engineers, officers and members of the several companies shall, when on duty, wear such badges or uniform as the Board of Directors may from time to time designate, the badges to be furnished at the expense of the city; and no other person shall be permitted to wear the same, except under such restrictions and regulations as the Board of Directors may approve.

SECT. 30. The Board of Engineers shall have authority to divide the city into fire districts, and form the companies into battalions to work the apparatus in said districts; and they shall require the foremen and hosemen who are permanently employed to perform patrol duty, and to render such services in connection with the police and the department for the survey and inspection of buildings as they may deem expedient; the rules and regulations relating thereto to be subject, however, to the approval of the Board of Directors.

SECT. 31. Whenever any fire occurs in either of the adjoining cities or towns, only such and so many of the engineers shall repair thither as may have been previously designated for such purpose by the Board of Engineers. And no company shall leave the city in case of fire in either of the adjoining cities and towns, except by the express order of the Chief Engineer or the First Assistant, or one of the District Engineers. And no company shall leave the city for any other purpose, except by permission of the Board of Directors.

Sect. 32. No associations, or organized societies or clubs of firemen, as such, shall be allowed in the department, except by the express permission of the City Council.

Sect. 33. No company shall be allowed to impose fines upon its members. For every absence or tardiness there shall be deducted from the pay of the absent or tardy officer or member the sum of one dollar, which amount so deducted shall be paid over at the end of each quarter to the treasurer of the company to which such officer or member shall belong, to meet the incidental expenses of the company. And if any officer or member shall have been absent or tardy at more than one-third of the fires, or alarms of fires, occurring during the month, if more than five, except in cases of sickness, such absence or tardiness shall be considered good cause for his discharge from the department.

Sect. 34. The Board of Engineers, notwithstanding the provisions herein contained, may, with the approval of the Board of Directors, grant to any officer or member of the Fire Department, if they think it compatible with the interests of the department, a vacation not exceeding two weeks in any one year, upon such terms as they may think expedient.

And the Board of Engineers, with the advice and consent of the Board of Directors, may, if they see fit, whenever any member or officer of the Fire Department shall not, by reason of such vacationor sickness, or otherwise, attend to his duties in the department, appoint a substitute to act in his place during his absence.

SECT. 35. As soon as may be after the first organization of the Board of Directors of the Fire Department as hereinbefore provided, and annually afterwards in the month of April, the Mayor shall appoint, subject to the approval of the said Board of Directors, a Superintendent of Fire Alarms, to hold office until the first Monday in May in the year next ensuing, and until his successor is appointed, or he is removed; and he may be removed at any time at the pleasure of the Mayor, and a vacancy from any cause may be filled in the same manner in which the original appointment is herein directed to be made. For his services he shall receive such compensation as the City Council may from time to time determine.

SECT. 36. The said Superintendent of Fire Alarms shall have power to appoint, subject to the approval of the Board of Directors, such number of persons as may be necessary to operate and maintain the said telegraphic fire alarm; and he may, with the approval of said board, discharge any of said persons at any time. The compensation of the persons employed in the said Fire Alarm Department shall be fixed by the Board of Directors.

SECT. 37. The Board of Directors shall designate the persons to whom shall be intrusted the keys of the signal boxes; and shall locate new boxes and discontinue any of those heretofore in use whenever they may deem expedient. And they shall, moreover, have authority to make rules and regulations under which alarms shall be given by the police or others intrusted with that duty.

SECT. 38. The Superintendent of Fire Alarms shall have the general care and management of the fire-alarm telegraph, subject to such rules and regulations as the Board of Directors may adopt; and he shall be held responsible for the good order and condition of that branch of the Fire Department.

Sect. 39. No person shall open any of the signal boxes connected with the fire-alarm telegraph, for the purpose of giving a false alarm, nor interfere in any way with said boxes, by breaking, cutting, injuring or defacing the same, nor turn the cranks therein, except in case of fire, nor tamper or meddle with said boxes or any part thereof.

Sect. 40. Any person who shall be guilty of a breach of any of the provisions of this ordinance, except as otherwise specially provided in any section thereof, shall forfeit and pay a fine of not less than two dollars nor more than fifty dollars for each offence.

Sect. 41. It shall be the duty of the members of the Police Department to aid the Fire Department by giving alarms in case of fire in such manner as the Board of Directors may direct, and in clearing the streets or grounds in the immediate vicinity of the fire, so that the members of the Fire Department shall not be hindered or obstructed in the performance of their duties. If any policeman refuses or neglects to give an alarm as directed in the manner aforesaid, or refuses to obey the orders of the chief officer in command at the fire, he shall forfeit and pay a fine of not less than five nor more than twenty dollars.

Sect. 42. The ordinance in relation to the Fire Department, printed in the revised ordinances, adopted the thirty-first day of December, A. D. 1869, and all amendments and additions thereto, are hereby repealed, said repeal to take effect upon the organization of the Board of Directors, as herein designated; provided, however, that the present Chief and Assistant Engineers and the Superintendent of Fire Alarms shall continue to hold their offices until their successors under this ordinance are appointed.

City Document.—No. 118.

CITY OF BOSTON.

REPORT

ON THE

Proposed Establishment in this City

OF

REGIMENTAL ARMORIES.

IN BOARD OF ALDERMEN, Oct. 9, 1873.

Laid on the table, and ordered to be printed.

Attest: S. F. McCLEARY,
City Clerk.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, October 9th, 1873.

The Committee on Armories, who were directed to consider what change in the amounts heretofore allowed for rents of armories will be advisable, in view of the provisions of the statute for the reorganization of the militia, recently passed, have considered the subject, and beg leave to

REPORT.

They consider the passage of the statute in question due to a growing recognition in the community, of the necessity in our form of government, which repudiates a standing army, of supplying its place with a reliable, disciplined and efficient body of citizen troops, ready for action when called on, — a more reliable, disciplined and efficient body than we have had since the close of the war; for now that the natural reaction which occasioned its neglect has passed, our war experience shows us, more clearly than ever before, wherein true discipline and efficiency consist, and the public, which now appreciates, these qualities demands them for the militia.

An important feature in the law is the prohibition of the use of armories for other than their legitimate purpose. Such uses have, beyond doubt, a demoralizing tendency, but have been excused on the ground that rents could not otherwise be paid, without such assessments upon the soldiers themselves as would drive much of the best material out of the service. There is much force in this argument, if supported by fact; for certainly poverty ought to prevent no man from serving the State as a soldier, if he so desires. To obviate this objection, the law provides an important increase in the State allowance for this purpose; and the question is, whether the city should not adopt a similar course, and thus join hands with the Commonwealth in its policy in support of the militia. The committee regard this duty as incontestable. The larger the city, the more indispensable is it that its militia be properly quartered, where they can give the most efficient protection if called on. In other words, they must be where they can be got at. Their rallying points should be centralized, and no longer scattered, without plan, wherever cheap accommodation can be found. Fires, riots, and all occasions wherein we look to the militia for protection, come upon us unannounced; and unless the latter can be promptly called into action, they come too late to prevent mischief; and of this none are better aware than the criminal classes, who can calculate to a nicety how much time will elapse before the military arm can be used against them.

For small cities and towns the company quarters and rallying points may suffice; for the metropolis, which can hardly be supposed to call for less than a battalion, the regimental armory seems a necessity.

And the fact that the company, and not the regiment, has been regarded as the unit in the militia, has been, in our opinion, the latter's greatest weakness, as it renders the enforcement of an uniform standard of discipline next to impossible. The conclusion to which these considerations have brought this committee are, briefly, that the protection of the city, no less than the interests of the militia, alike demand a concentration of the armories or rallying points of each regiment or battalion under the same roof. To this policy more than to any other we ascribe the reputation of the New York regiments, with which ours cannot as yet court comparison. The existence of petty independent commands is, we think, to be deprecated. Without considering, therefore, what may be the comparative excellence of existing organizations, or suggesting in any manner upon what nucleus it might be best to form others, the committee are fully of the opinion that it would be a great step towards competing successfully with our sister city, if the infantry within our city limits could be organized into two full regiments, each to be quartered under one roof, without expense either to men or officers. Should such a reorganization be effected by the State authorities, the committee think that it would be a measure of direct economy over the present system, should the city, selecting appropriate sites, build, furnish, and keep in repair like other public buildings, regimental armories, with quarters for each company, and a hall large enough for wing drills. Commanding officers could then be held responsible for the behavior of their subordinates with something like military system; applications to the City Hall would be made through the proper channels, and only with the knowledge and approval of superiors, who would have no excuse for not knowing the real needs of their command. There would be an end to the present slip-shod and discreditable system, if such it can be called, which results in a rivalry of companies, each bent on getting the most out of the city treasury.

With the increased State allowance, and the rent of the lower stories of such buildings, the committee cannot but think that they would soon become a source of income instead of expense to the city.

Should these views meet the approval of the City Council, the committee would recommend that the same be communicated to His Excellency the Commander-in-chief, and his military advisers, with a view of obtaining concert of action, and to that end would respectfully present the accompanying order.

For the committee,

SAMUEL M. QUINCY, *Chairman.*

Ordered, That the Joint Standing Committee on Armories be instructed to communicate the views contained in the foregoing report, to His Excellency the Commander-in-chief, as those of the City Council of Boston, and to express to His Excellency their firm conviction that, when the militia infantry of Boston shall receive a permanent regimental organization, the City Council will take immediate measures to provide them with such regimental quarters as shall conduce to their comfort and their reputation as Massachusetts soldiers.

City Document.—No. 119.

CITY OF BOSTON.

ORDINANCE

TO ESTABLISH A

FIRE DEPARTMENT,

AS PASSED BY THE

BOARD OF ALDERMEN,

OCTOBER 13, 1873.

CITY OF BOSTON.

In the year one thousand eight hundred and seventy-three.

AN ORDINANCE TO ESTABLISH A FIRE DEPARTMENT.

Be it ordained by the Aldermen and Common Council of the City of Boston in City Council assembled, as follows: —

SECTION 1. The Fire Department of the City of Boston shall consist of a Board of three Fire Commissioners, a Chief Engineer, a Superintendent of Fire Alarms, ten Assistant Engineers, and other Officers, Enginemen, telegraph operators, and other members, to the number of five hundred and fifty men.

SECT. 2. In the month of October, in the year 1873, or as soon thereafter as may be, the Mayor shall appoint, subject to the approval and confirmation of the City Council, three persons, who shall constitute said Board of Fire Commissioners of the City of Boston, and who shall have and exercise the powers and duties hereinafter designated. One member of said Board shall be appointed to hold his office until the first Monday of May in the year one thousand eight hundred and seventy-four, one until the first Monday of May in the year one thousand eight hundred and seventy-five, and one until the first Monday of May in the year one thousand eight hundred and seventy-six. In the month of April in the year one thousand eight hundred and seventy-four, and thereafterwards annually in the month of April, the Mayor shall appoint, subject to like confirmation and approval, one person to be one of said Fire Commissioners for the term of three years from the first Monday of the following May. The persons so appointed shall devote their time to the duties of the office, and shall not actively engage in any other business. Any member of said Board shall, at any time, be subject to removal by the Mayor for cause, and all vacancies occurring in said Board, from any cause, shall be filled in the same manner in which the original appointments are herein directed to be made. No member of either branch of the City Council shall hold the office of Fire Commissioner. For their services the Fire Commissioners shall receive such compensation as the City Council may from time to time determine.

SECT. 3. The said Board shall organize forthwith upon the first appointment of its members, and thereafterwards annually on the first Monday of May, by the choice of one of their members as chairman. They shall also choose a clerk, who shall not be a member of the Board; and they shall make such rules and regulations for their own government and for the government of all other officers and members of the fire department, including the fire-alarm telegraph, as they may deem expedient, provided that said rules and regulations shall not be inconsistent with the ordinances of the city.

SECT. 4. The duty of extinguishing fires and protecting life and property in case of fire, shall within the City of Boston be intrusted to the said Board of Commissioners; and, to enable them to perform that duty in the most efficient manner, the said Board is hereby authorized to appoint all other officers and members of the Fire Department, including the fire-alarm telegraph, and fix their compensation; to discharge any of said officers or members at any time for cause; to divide the city into fire districts; to organize companies and battalions to work the apparatus; to establish a Fire Patrol by detail from the permanent force of the department, which shall render such services in connection with the police and the department for the survey and inspection of buildings as the said Commissioners may direct; to purchase horses, steam-engines, extinguishers, hose carriages, hook-and-ladder carriages, and all other apparatus and supplies necessary for the complete equipment of the said department, or conducive to the proper performance of its duties; provided, however, that the expenditures for the purposes herein named shall not exceed in the aggregate the sums previously appropriated by the City Council for the maintenance of said Fire Department.

Sect. 5. The said Board of Fire Commissioners shall, annually, on or before the 15th day of February, send to the City Auditor an estimate in detail of the appropriations required for the maintenance of the Fire Department during the next financial year. All bills for expenditures from the appropriations for the Fire Department shall be drawn for by the said Board, examined by the Auditor, and approved by the Committee on Accounts, before they are paid by the Treasurer.

Sect. 6. The said Board shall, on or before the tenth day of each month, present to the City Council a report made up to and including the last day of the preceding month, containing a chronological statement of the number of fires in such month, with the causes thereof, a general description of the property destroyed or injured at each fire, with the names of the owners or occupants and the amount of insurance, if any, specifying the portion of the force and apparatus called into action at each fire, with the name of the officer in command, also a statement of all fatal or serious accidents to members of the department or others on account of fires, or alarms of fires during the month, together with such other information or suggestions as they may deem proper. They shall also, annually, in the month of May or June, present to the City Council a report made up to, and including, the thirtieth day of the preceding April, containing, in addition to a consolidated statement of the facts contained in the monthly reports of the preceding year, a list of the causes of fire, alphabetically arranged, a statement of the income and expenditures on account of the department during the preceding year, a schedule of all the property belonging to the department, with a statement as to its condition on the date of the report, and an estimate of its value, also a statement of the number and location of the fire-alarm boxes; together with such other information or suggestions as they may deem proper.

Sect. 7. The Chief Engineer and the Assistant Engineers appointed by the Fire Commissioners as hereinbefore provided, shall constitute the Board of Engineers of the City of Boston, and shall have and exercise all the powers conferred upon such officers by the Statutes of the Commonwealth and by the ordinance in relation to the manufacture, storage and sale of petroleum, camphene and burning fluids. And they shall also have authority, under the direction of the Fire Commissioners, to inquire for and examine into all shops and other places where shavings or other such combustible materials are collected or deposited, and report to said commissioners from time to time the condition in this respect of the district to which they are assigned; and whenever, in the opinion of said commissioners, the same may endanger the security of the city from fires, they shall direct the tenant or occupant of said shops or other places to remove such shavings or other combustible materials; and in case of such tenant's or occupant's neglect or refusal so to do, they shall cause the same to be removed at the expense of such tenant or occupant, who shall, in addition, be liable to a penalty of not less than five nor more than fifty dollars for such neglect or refusal; and any person who shall obstruct the said commissioners or engineers or any of them in carrying out the provisions of this section, shall also be liable to a penalty of not less than five nor more than fifty dollars.

Sect. 8. It shall be the duty of the members of the Police Department to aid the Fire Department by giving alarms in case of fire in such manner as the Fire Commissioners may direct, and in clearing the streets or grounds in the immediate vicinity of the fire so that the members of the Fire Department shall not be hindered or obstructed in the performance of their duties. If any policeman refuses or neglects to give an alarm, as directed in the manner aforesaid, or refuses to obey the orders of the chief officer in command at a fire, he shall forfeit and pay a fine of not less than five nor more than twenty dollars.

Sect. 9. The said Board of Fire Commissioners shall make suitable regulations, under which the officers and men of the Fire Department shall be required to wear any appropriate uniform and badge, by which, in case of fire and at other times, the authority and relations of such officers and men in said department may be known, as the exigency of their duties may require.

Sect. 10. There shall be appointed annually in the month of January, a Joint Committee of the City Council on the Fire Department, consisting of two members of the Board of Aldermen and three members of the Common Council. It shall be the duty of said committee to examine, as often as once in each month, the records and accounts of the Board of Commissioners on the Fire Department, and also to examine all applications for appropriations for the said department, and report thereon to the City Council.

Sect. 11. The ordinance in relation to the Fire Department, printed in the revised ordinances adopted the thirty-first day of December, A. D. 1869, and all the amendments and additions thereto, are hereby repealed, said repeal to take effect upon the organization of the Board of Fire Commissioners as herein designated. All officers and members of the department at the time of such repeal shall hold their several offices until their successors are appointed, at the salaries established by the City Council; and, until otherwise ordered by the Fire Commissioners, shall be subject to the rules and regulations now in force governing the officers and members of the Fire Alarm and Fire Departments; and the present Joint Standing Committee of the City Council on the Fire Department shall perform the duties provided in Section 10, during the remainder of this municipal year.

In Board of Aldermen, Oct. 13, 1873.
Passed: Sent down for concurrence.

L. R. CUTTER,
Chairman.

City Document. — *No.* 120.

CITY OF BOSTON.

BETTERMENT FOR THE WIDENING

OF

KNEELAND STREET.

1873.

CITY OF BOSTON.

Schedule of Assessments made by the Board of Street Commissioners upon the estates benefited by the widening of Kneeland street, from Washington street to Harrison avenue, as authorized by a resolve and order of the Board, passed November 10, 1871, the expense of which was estimated at the time of the passage of said resolve and order at $128,017.50.

ASSESSMENT OF BETTERMENTS.

Owners.	Location.	Total Betterment.	Amount Assessed.
W. H. Hill	Cor. Wash. and 2 and 4 Kneeland.	$5,000	$2,500
W. H. Hill	14 Kneeland.	4,740	2,370
S. Rowland Hart	16 "	3,626	1,813
N. E. Female Moral Reform Society	18 "	3,414	1,707
Job F. Bailey	20 "	3,120	1,560
Samuel Rice	24 "	5,340	2,670
Elizabeth B. Howorth	26 "	3,216	1,608
Charles Andrews	28 "	3,112	1,556
Heirs of John W. Warren	Cor. Harrison avenue.	2,220	1,110
Thomas W. Tuttle	Cor. Harri'n av. and 32 Kneeland.	1,400	700
John Sharland	34 Kneeland.	900	450
J. H. J. Hincke	36 "	800	400
Lydia B. McIntire	38 "	800	400
Heirs of Elizabeth Batterman	40 "	760	380
John Robbins	42 " and cor. Tyler street.	660	330
First Christian Church	44 " " "	1,600	800
Boston Advent Association	54 " " of Hudson.	1,200	600
John W. Foye	56 " " "	400	200
Robert Mackie	58 "	290	145
Samuel Rice	60 "	260	130
Jeremiah Sullivan	62 "	230	115
Michael J. Driscoll	64 "	200	100
John Sullivan	Cor. Albany.	180	90
Boston & Albany Railroad Co.	N. E. cor. Albany and Kneeland.	200	100
Boston & Albany Railroad Co.	S. E. cor. Kneeland and Albany.	200	100
Samuel M. Pennock	65 Kneeland and cor. Albany.	200	100
Ziba Stearns	61 Kneeland.	220	110
Francis Roche	59 "	240	120
Robert Mackie	57 "	270	135
John Warren	55 "	250	125
John Casey	Cor. Kneeland and Hudson.	360	180
Sophronia C. Squires	" " " "	400	200
Sophronia C. Squires	51 Kneeland.	360	180
Thomas W. Davis	49 "	360	180
Herman Nelson	47 "	380	190
Heirs of Joseph M. Barry	45 "	400	200
Patrick Maguire and John W. McDonald	Cor. Kneeland and Tyler.	900	450
Elbridge G. Briggs	41 Kneeland and cor. Tyler.	820	410
Cyrus Hicks	37 Kneeland.	660	330
Edward Bangs, trustee	31 to 35 " cor. Harrison av.	2.200	1,100
George A. P. Darling	29 Kneeland, " "	1,720	860
George A. P. Darling	27 "	2,772	1.386
Heirs of Eliza Shimmin	25 "	3,582	1,791
Joseph Benari	23 "	4,114	2,057
Frederick Warren	21 "	3,266	1,633
John C. and James G. Haynes	19 "	4,592	2,296
Samuel Batchelder	Cor. Kneeland pl. and 9 Kneeland	5,428	2.714
Samuel Batchelder	2 Kneeland pl.	1,200	600
Charles M. Parker	3 " "	400	200
John P. Treadwell	Cor. Bates pl.	3,250	1,625
John P. Treadwell	Cor. Kneeland and Washington.	3,750	1,875
		$85,962	$42,981

CITY OF BOSTON.

In Board of Street Commissioners, Nov. 1, 1873.

Whereas, pursuant to a resolve and order of this Board, passed November 10, 1871, Kneeland street was widened, from Washington street to Harrison avenue, at an estimated expense of $128,017.50; and *whereas*, in the opinion of the Board, the estates named in the foregoing schedule have been benefited by the widening of said street; it is therefore hereby

Ordered, That the estates named in the schedule be, and they hereby are, respectively charged with the sums therein severally named against them, such sums so assessed not exceeding one-half of the amount of the adjudged benefit to the estates by the said widening.

City Document. — *No.* 121.

CITY OF BOSTON.

REQUEST

FOR AN

ADDITIONAL APPROPRIATION

FOR

SEWERS.

CITY OF BOSTON.

In Board of Aldermen, Nov. 3, 1873.

To the City Council: —

The Committee on Sewers report to the Council that an additional appropriation of thirty thousand dollars will be required to finish the sewers considered necessary for the health and convenience of the citizens, and to provide for the ordinary expenses of the department till May 1st, 1874.

The original appropriation was $200,000. There now remains in the Treasury $18,029.40.

It will require to finish work deemed necessary	$38,000
For running expenses of department to 1st May	10,000
	$48,000
Less amount on hand	18,000
Balance needed	$30,000

The committee need hardly remind the Council that the increased expense has been caused by the urgent solicitation of property owners for drainage facilities, and that three-fourths of the expenditures on this account are reimbursed to the city within twelve months.

For the Committee,

JAMES POWER,
Chairman.

City Document. — *No.* 122.

CITY OF BOSTON.

AUDITOR'S MONTHLY EXHIBIT.

NOVEMBER 4, 1873.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1873-74.

MONTHLY EXHIBIT.

Office of the Auditor of Accounts,
City Hall, November 4, 1873.

To the Honorable City Council:

Gentlemen, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1873–74, as shown in the books in his office, November 1, 1873, including the November draft, being seven months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,
Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Advertising	$6,000 00	$2,205 31	$3,794 69
Annuities	512 00	245 00	267 00
Armories	22,000 00	9,059 81	12,940 19
Board of Health	86,274 00	46,987 41	39,286 59
Boston Harbor	10,000 00	2,348 11	7,651 89
Bridges	*32,000 00	21,585 91	10,414 09
Cedar Grove Cemetery Add Revenue rec'd, $9,534 83	3,000 00	12,391 08	143 75
Cemeteries	15,700 00	8,162 28	7,537 72
Charles River and Warren Bridges	7,000 00	3,188 54	3,811 46
Chestnut Hill Driveway	5,000 00	5,000 00	. . . .
City Hospital	110,000 00	70,233 61	39,766 39
Common, Public Squares, etc.	80,000 00	78,571 55	1,428 45
Contingent Funds, viz.:			
Joint Com'i'tees of the City Council	4,000 00	1,080 50	2,919 50
Mayor	1,500 00	35 00	1,465 00
Board of Aldermen	1,500 00	911 55	588 45
Common Council	3,000 00	1,753 00	1,247 00
County of Suffolk	325,000 00	164,263 14	160,736 86
East Boston Ferries	290,000 00	209,955 24	80,044 76
Engineer's Department	24,000 00	13,068 19	10,931 81
Fire Alarms and Bells and Clocks	50,940 00	31,645 53	19,294 47
Fire Department	551,316 00	372,665 46	178,650 54
Grammar School House, L street	¶†48,838 55	48,783 44	55 11
Health Department	383,550 00	224,883 91	158,666 09
Incidental Expenses	87,000 00	26,716 79	60,283 21
Inspection of Buildings	16,800 00	12,277 09	4,522 91
Interest and Premium	1,695,000 00	518,138 28	1,176,861 72
Lamps	390,000 00	189,921 63	200,078 37
Markets	**15,500 00	10,999 12	4,500 88
Militia Bounty	45,000 00	5,165 00	39,835 00
Mount Hope Cemetery Add Revenue rec'd, $19,802 91	15,000 00	30,336 14	4,466 77
Overseers of the Poor	73,400 00	33,430 05	39,969 95
Old Claims	1,500 00	442 70	1,057 30
Paving, etc.	1,000,000 00	694,989 54	305,010 46
Police	700,000 00	391,181 50	308,818 50
Printing and Stationery	35,000 00	23,499 41	11,500 59
Public Baths	40,000 00	30,036 95	9,963 05
Public Buildings	92,000 00	74,788 79	17,211 21
Public Institutions, viz.:			
House of Industry	180,000 00	111,703 76	68,296 24
House of Correction	90,500 00	65,609 34	24,890 66
Lunatic Hospital	60,000 00	34,200 90	25,799 10
Pauper Expenses	31,500 00	15,236 46	16,263 54
Steamboat "Henry Morrison"	16,000 00	11,354 45	4,645 55
Office Expenses	8,000 00	4,359 40	3,640 60
Public Lands	6,000 00	1,957 81	4,042 19
Public Library	‡115,197 28	87,838 96	27,358 32
Quarantine Department	19,250 00	14,892 33	4,357 67
Registration of Voters and Election Expenses	20,000 00	2,030 79	17,969 21
Carried forward	$6,813,777 83	$3,720,130 76	$3,122,984 81

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* $4,000 of this amount brought from last year.
† $26,338 55 of this amount brought from last year.
‡ $25,197 28 of this amount brought from last year.
¶ $7.500 transferred from Reserved Fund.
** $5,500 transferred from Reserved Fund.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Brought forward . . .	$6,813,777 83	$3,720,130 76	$3,122,984 81
Reserved Fund	*287,000 00	90,600 00	196,400 00
Salaries	166,000 00	109,058 07	56,941 93
Schools and School-houses, viz.:			
School Instructors . . .	1,024,875 00	548,222 55	476,652 45
School expenses, School Committee	86,750 00	68,184 66	18,565 34
Salaries officers, School Committee	24,500 00	14,259 34	10,240 66
School-houses, Public Buildings	255,000 00	155,789 03	99,210 97
Sealers of Weights and Measures .	7,000 00	4,030 38	2,969 62
Sewers	200,000 00	181,970 60	18,029 40
Sinking Fund Commissioners .	2,800 00	1,350 00	1,450 00
State Tax	736,480 00	. . . . .	736,480 00
Surveyor's Department . . .	40,000 00	21,940 13	18,059 87
Water Works	336,500 00	281,161 16	55,338 84
Water Works, Interest and Premium	653,000 00	73,709 99	579,290 01
West Boston and Cragie's Bridges	¶88,832 23	5,427 35	83,404 88
Widening Streets	300,000 00	166,894 06	133,105 94
		$5,442,728 08	$5,609,124 72
Total Appropriations, $10,932,147 00			
Balances from 1872–3, 90,368 06	$11,022,515 06		
Add Revenue,	29,337 74		
	$11,051,852 80		

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* $7,500 transferred to Grammar School House, L street.
* $5,500 transferred to Markets.
¶ $34,832 23 of this amount brought from last year.

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General . . .	$11,051,852 80	$5,442,728 08	$5,609,124 72
Special . . .	9,245,872 21	4,526,736 75	4,719,135 46
	$20,297,725,01	$9,969,464 83	$10,328,260 18

SPECIAL APPROPRIATIONS.

[*Under this head, the appropriations are the balances brought from the last financial year, and appropriations made the present financial year.*]

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Addition to Engine House No. 16, (reserved fund)	$18,000 00	$5,428 32	$12,571 68
Additional Supply of Water (transfer and loans)	546,418 36	28,650 48	517,767 88
Appleton Street Extension (loan)	2,938 10	. . . . . .	2,938 10
Atlantic Avenue (loans)	203.516 22	72,022 04	131,494 18
Broadway Extension (loans)	80,680 21	. . . . . .	80,680 21
Burnt District (loans)	3,892,516 28	2,244,891 71	1,647,624 57
Canton Street Grading (loan)	33,225 20	. . . . . .	33,225 20
Chelsea Street Bridge (loan)	23,000 00	17,094 52	5.905 48
Church Street District (loans)	21,415 32	21,587 48	($172.16 advanced by Treasurer.)
Coal Sheds, Deer Island (appropriation)	15,000 00	14,991 13	8 87
Columbus Avenue Extension (loans)	362,750 00	325,000 00	37,750 00
Devonshire Street Extension (loan)	113,544 00	81,529 26	32,014 74
Engine and Hook and Ladder House Ward 5 (loans)	65,000 00	17,933 66	47.066 34
Engine House, Mason Street (transfer)	15,000 00	. . . . . .	15.000 00
Engine House No. 12 (loans and transfer)	23,187 51	16,829 80	6,357 71
Engine House, Ward 14 (transfers and loan)	25,898 95	16,314 55	9,584 40
Fort Hill Improvement (loans)	116.417 77	7,912 13	108,505 64
Fort Hill Wharf (loan)	110,000 00	110,000 00	. . . . . .
Grading Madison Square (transfers)	3,015 96	3.015 96	. . . . . .
Grammar School House, Atherton District (loan)	22,861 10	22,798 95	62 15
Grammar School House, Dudley District (loan)	110,000 00	32,612 85	77,387 15
Grammar School House Ward 15 (loan)	105,000 00	31,325 80	73,674 20
Harrison Avenue Extension (loan)	58,970 91	12,860 44	46,110 47
Highland Street Stable (loan)	85,000 00	23,400 38	61,599 62
Home for Poor, Deer Island (transfer)	225,000 00	. . . . . .	225,000 00
Hook and Ladder House No. 4, (reserved fund)	33.000 00	11,472 12	21,527 88
Hose House, Longwood (loan)	28,000 00	5,750 00	22,250 00
Hose House, South Boston (transfer)	7,182 11	7,146 28	35 83
Mather School House, Ward 16 (loan)	46,784 16	46,356 49	427 67
Memorial Monument, Boston Common (transfer)	75.000 00	. . . . . .	75,000 00
New Lunatic Hospital (loan and appropriation)	103,655 62	611 58	103,044 04
Parker Hill Reservoir (loan)	161,000 00	5,515 15	155,484 85
Police Station House No. 11 (transfer)	7,500 00	7,500 00	. . . . . .
Police Station House, South Boston (loan)	45,000 00	11,308 28	33,691 72
Primary School Houses, East Boston	80,000 00	25,429 44	54,570 56
Primary School House Lot, Ward 14 (reserved fund)	10,000 00	9,383 50	616 50
Primary School House, Newbury Street (loan)	40,000 00	. . . . . .	40,000 00
Primary School House, Ward 9 (loan)	60,000 00	59,080 00	920 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	. . . . . .	10,000 00
Small-pox Hospital (loan)	37,512 46	1,524 50	35,987 96
Soldiers' Relief (revenue)	151,115 48	40,310 28	110,805 20
South Market Street Extension (loan and transfer)	31,915 53	30,613 96	1,301,57
Station House, District No. 11 (loan)	40,000 00	. . . . . .	40,000 00
Suffolk Street District (loans)	326,933 79	307,492 58	19,441 21
Ticknor Bequest (transfer)	2,060 51	. . . . . .	2.060 51
Washington Street Extension (loan)	1,025,328 00	600,650 00	424,678 00
Water Street Grade Damages (transfer)	15,546 17	. . . . . .	15,546 17
Water Works Wards 13, 14, 15 and 16 (loan)	115,000 00	109,272 98	5,727 02
Widening and Grading Dudley and other Streets (loan)	10,823 50	2,591 30	8,232 20
Widening Eliot Street (loan and transfer)	13,458 99	. . . . . .	13.458 99
Widening Federal Street (loans)	1,103 03	. . . . . .	1,103 03
Widening Federal Street Bridge (loan and transfer)	9,287 76	8,745 00	542 76
Widening Hanover Street (loans)	41,127 92	. . . . . .	41,127 92
Widening Hanover Street, No. 2 (loans)	62,146 81	11,200 00	50,946 81
Widening Kingston Street (loan)	59,535 81	. . . . . .	59,535 81
Widening Kneeland Street (loan)	4,564 67	77 48	4,487 19
Widening Warren Street (loan)	62,934 00	15,888 37	47,045 63
Widening Washington and Essex Streets (loan)	250,000 00	102,618 00	147,382 00
	$9,245,872 21	$4,526,736 75	$4,719,307 62
		Less to be provided for	172 16
			$4,719,135 46

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1873.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the November draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans)	$610,000 00	$92,232 12	$517,767 88
Appleton Street Extension (loan)	100,000 00	97,061 90	2,938 10
Atlantic Avenue (loans) . .	1,600,000 00	1,468,505 82	131,494 18
Broadway Extension (loans) .	1,000,000 00	919,319 79	80,680 21
Burnt District (loan)	5,000,000 00	3,352,375 43	1,647,624 57
Canton Street Grading (loan) .	150,000 00	116,774 80	33,225 20
Church Street District (loans) .	1,175,000 00	1,175,172 16	($172.16 advanced by Treasurer.)
Columbus Avenue Extension (l'ns)	515,000 00	477,250 00	37,750 00
Devonshire Street Extension (loan)	510,000 00	477,985 26	32,014 74
Engine House No. 12 (loans & tr'n.)	34,500 00	28,142 29	6,357 71
Engine House W'd 14 (tran. & l'n)	33,000 00	23,415 60	9,584 40
Fort Hill Improvement (loans) .	1,575,000 00	1,466,494 36	108,505 64
Grading Madison Square (transfers)	12,158 49	12,158 49	. . . .
Grammar School House Atherton District (loan)	50,000 00	49,937 85	62 15
Grammar School House L Street (loan and appropriation) . .	112,500 00	112,444 89	55 11
Harrison Avenue Extension (loan)	220,000 00	173,889 53	46,110 47
Hose House, So. Boston (transfer)	23,000 00	22,964 17	35 83
Mather School House, W'd. 16 (loan)	65,000 00	64,572 33	427 67
New Lunatic Hospital (loan and appropriation)	148,000 00	44,955 96	103,044 04
Oliver Street	187,114 05	352,895 17	($165,781.12 advanced by Treasurer.)
South Market Street Extension (loan and transfer)	333,000 00	331,698 43	1,301 57
Suffolk Street District (loans) .	2,381,248 96	2,361,807 75	19,441 21
Washington St. Extension (loan)	1,500,000 00	1,075,322 00	424,678 00
Water Street Grade Damages (tr'n)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley and other Streets (loans) . .	180,000 00	171,767 80	8,232 20
Widening Eliot Street (l'n and tr'n)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Federal St. Bridge (loan and transfer)	90,584 25	90,041 49	542 76
Widening Hanover Street (loans)	725,000 00	683,872 08	41,127 92
Widening Hanover St., No. 2 (l'ns)	820,000 00	769,053 19	50,946 81
Widening Kingston Street (loan)	225,000 00	165,464 19	59,535 81
Widening Kneeland Street (loan)	150,000 00	145,512 81	4,487 19
Widening Warren Street (loan)	115,000 00	67,954 37	47,045 63
	$20,455,105 75	$17,175,933 84	$3,445,125 19
Advanced by Treasurer . .	165,781 12	Less to be provided for	172 16
	$20,620,886 87		$3,444,953 03

City Document.— No. 123.

CITY OF BOSTON.

FINAL REPORT

OF THE

JOINT STANDING COMMITTEE

ON THE

FIRE DEPARTMENT.

1873.

In Board of Aldermen, November 10, 1873.

Laid on the table and ordered to be printed.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Nov. 10th, 1873.

In view of the change in the management of the Fire Department, as provided in the ordinance approved Oct. 24th, 1873, the Joint Standing Committee of the City Council, which has had the general supervision of the department from the 16th of January last, begs leave to submit the following report, giving some account of the organization of the old department, and a statement of its present condition.

As early as 1711 the General Court provided for the appointment in this city of officers known as fire-wardens, with powers and duties similar to those now exercised by the engineers. The preamble to the act then passed recites that, "Whereas, by reason of the contiguity and adjoining of the houses and dwellings within the town of Boston, persons are under great affrightment and hurry upon the breaking out of fire; and not only the person in whose house the fire first breaks out, but the neighborhood, are concerned to employ their utmost diligence and application to extinguish the fire, and prevent the progress thereof, and to preserve their substance by the removal of their goods, being glad of the assistance of others in that regard, and divers evil-minded and wicked persons, on pretence of charitably offering their help, taking advantage of such confusion and calamities to rob, plunder, embezzle, convey away and conceal the goods and effects of their distressed neighbors, —

For preventing whereof, —

Section 1. Be it enacted by His Excellency the Governor, Council, and Representatives, in General Court assembled, and by the authority of the same, that it shall and may be lawful to and for the justices of the peace, and selectmen of the town of Boston, from time to time to appoint such number of prudent persons, of known fidelity, not exceeding ten, in the several parts of the town, as they may think fit, who shall be denominated and called firewards, and have a proper badge assigned to distinguish them in their office, viz.: a staff of five feet in length, colored red, and headed with a bright brass spire of six inches long; and at times of the breaking forth of fire, and during the continuance thereof, shall, and hereby are fully authorized and empowered to command and require assistance for the extinguishing and putting out the fire, and for removing of household stuff and furniture, goods and merchandizes, out of any dwelling-houses, store-houses, or other buildings actually on fire, or in danger thereof, and guards to secure and take care of the same, as also to require assistance for the pulling down or blowing up of any houses, or any other service relating thereto, by the direction of two or three of the chief civil or military officers of the town, as is by law provided, to stop and prevent the further spreading of the fire, and to suppress all tumults and disorder."

The first city charter, which went into operation on the first of May, 1822, provided that the citizens, at their respective ward-meetings, should elect, by ballot, a number of persons, to be determined by the City Council, but not less than three in each ward, to be firewards for the city, with all the powers, and subject to all the duties then by law appertaining to the firewards of the town.

The condition of the department at that time is thus described by Mayor Quincy: "Its efficiency chiefly depended upon the aid of the inhabitants, applied under the authority of the firewards. They formed lanes of bystanders, who, by their direction, passed buckets of water, from pumps or wells in the vicinity, to the engines playing on the fire, and returned them for further supply.

"This system of protection had its origin in the relations of the colonial state, when the inhabitants were few, habituated to labor, and respect for the rights of property was general. Dwelling-houses being then separated by gardens or vacant fields, extensive conflagrations were infrequent; yet, being of wood, and the means of insurance unattainable, their occasional loss kept alive the feeling of sympathy in the community. The duty of joining some fire company, and assisting at every fire, was, therefore, regarded as imperious.

"At the time of the adoption of the city government, Boston was in a transition state, and fast advancing to that period, when, by the increase of podulation, ties of individual interest were diminished. The establishment of insurance offices had, in most cases, transferred the loss upon capitalists; and poverty and crime, multiplying with numbers, began to regard fires as harvests, from the gleaning of which they had not principle enough to abstain.

"Although the state of things was obvious, and its effects began to be felt, yet it was long before the duty of aiding the sufferers caused the necessity of imposing restraint on the general interference of the citizens at fires to be recognized. This reluctance to acknowledge the effect of circumstances on the then existing system of protection was peculiarly strong among the engine companies, in whom the *esprit de corps* was active and general. From the earliest period of the settlement, the members of those companies had been accustomed to regard themselves as the guardians of the city against this element, and took a pride in the consciousness of their power. They were a body of men energetic and fearless. So far from regarding their labors as onerous, and looking for their reward in pecuniary compensation, a premium was often paid for admission into the companies, and they deemed themselves recompensed by a small allowance from the town, sufficient for an annual social supper, by exemption from militia duties, and the consciousness of useful and acceptable services to their fellow-townsmen. Their engines, found and supported by the town, were without ornament, and valued only for their power. To be first, nearest, and most conspicuous at fires, was the ambition of the engine-men; and the use of hose, as it had a tendency to deprive them of this gratification, was opposed."

In 1823, several companies petitioned for additional compensation for their services. It was refused. In one day all the engines in the city were surrendered by their respective companies; and on the same day every engine was supplied with a new company, by the voluntary association of public-spirited individuals.

Authority was soon after obtained from the Legislature for the reorganization of the department, so as to make it independent of the aid of citizens in case of fire. The new organization went into effect on the 29th of April, the form then established having continued without any substantial change from that time to the present. The department at that time contained three hundred and twenty men; sixteen hand engines, and only eight hundred feet of hose. In 1837 the ordinance establishing the fire department was revised, and under its provisions the chief engineer submitted his first annual report in 1838. The department contained at that time thirteen engineers, five hundred and ninety-five members, fifteen hand-engines, eight thousand two hundred and forty feet of leading hose, eighteen hose carriages, and one hook and ladder carriage.

On the 17th of September, 1860, the manual engines were entirely dispensed with, and steam engines (with hose-tenders attached), and separate horse hose-carriages, substituted in their places. The apparatus of the department consisted of nine steam engines with hose-tenders, nine separate horse hose-carriages, and three hook and ladder carriages. The members, including the engineers, numbered two hundred and thirty-six men.

The condition of the department at the time the great fire occurred last year, has been so fully described heretofore, that it would be superfluous to dwell upon the matter here. When the present government entered upon its duties, there was a very general demand, on the part of the citizens, that the efficiency of the department should be increased, both by additions to the apparatus, especially in the business portions of the city, and by changes in the organization of the force, so as to bring about a higher state of discipline. The recommendations made by the Mayor in his inaugural address, and also the recommendations made by the Commission appointed to investigate the cause and management of the great fire, received the immediate and earnest attention of this committee. On the 13th of March a report was submitted to the City Council, stating the progress made by the committee in strengthening and improving the department, and recommending certain changes in the ordinance by which greater responsibity in the management of the department would be secured. Those recommendations were referred to the Committee on Ordinances, and from that day to this no report has been made upon them. If the matter had received prompt attention, as requested by this committee, the principal defects of organization which were dwelt upon with so much force after the fire of May 30th, would have been cured, and the department would have been in a condition to meet criticism without fear as to the result.

The requests of the committee for appropriations from time to time, to carry out the improvements which they had projected, have been responded to generally, by the City Council, with great promptness.

The following statements show the additions in men and material made during the present year, — January 1st to November 1st, — a period of ten months: —

The following engine-houses have been built during the year, viz. : —

Engine Co. No. 12. — Corner of Winslow and Dudley streets, Highlands. This house was built to take the place of the old one, situated on the corner of Warren and Dudley streets, which was taken down on account of the widening of Warren street.

Engine Co. No. 22. — Parker street, Highlands. This building is for temporary use only.

Engine Co. No. 24. — Corner of Quincy and Warren streets, Highlands.

Engine Co. No. 25. — Washington square. For temporary use.

Hose House No. 4, Northampton street, has been enlarged so as to accommodate a steam fire-engine and horse hose-carriage.

Hose Co. No. 12. — Corner of Fourth and O streets, South Boston.

Hook and Ladder Co. No. 6. — Corner of River and Temple streets, Ward 16.

Hook and Ladder Co. No. 8. — Washington square; for temporary use.

A permanent house for Engine Co. No. 25 and Hook and Ladder Co. No. 8, corner of Washington square and Perkins street, has been contracted for, but not completed.

The building known as the "Normal School-house" on Mason street, is being remodelled so as to accommodate a permanent steam fire-engine company.

A building for Hook and Ladder Co. No. 4, on Dudley street, Highlands, has been contracted for.

Horse hose-carriages have been placed in engine houses numbered 4, 7, 8, 9 and 25, to run in connection with the engines in place of the small hose-tenders formerly used.

In accordance with the order of the City Council, horse hose-carriages will be placed in all the other engine houses as soon as they are completed.

The following pieces of apparatus have been repaired and put in the best condition: Engines Nos. 6, 7, 8, 13 and 15; Hose Carriages Nos. 1, 3, 4, 5, 6, 7 and 9; and Hook and Ladder Carriage No. 7.

Several of the horse hose-carriages have been remodelled so as to convey the firemen to fires.

The apparatus purchased or contracted for during the past year is as follows: —

1 steam fire-engine from Hunneman & Co. (rec'd)	$4,000 00
1 " " " " Amoskeag Mfg. Co. "	4,200 00
1 " " " " Clapp and Jones (contracted for, to be delivered Dec. 1st.)	4,250 00
4 horse hose-carriages from Amoskeag Mfg. Co. (contracted for) each	650 00
1 horse hose-carriage from Wm. Gilchrist (rec'd)	1,000 00
1 hook and ladder carriage from Hunneman & Co. (received)	1,600 00
4 coal wagons from Joseph T. Ryan (rec'd).	
1 self-acting fire-engine (Babcock) from New England Fire Ext. Co. (received)	2,000 00
1 steam fire-engine from Amoskeag Mfg. Co. (contracted for)	4,250 00
1 self-acting fire-engine from Holloway, Baltimore (contracted for)	1,500 00

The following additions have been made to the working force of the department: —

Engine Companies numbered 4 and 7 have been reorganized by the appointment of the foremen and hosemen for constant service; making twelve permanent members in each company.

Hose Co. No. 1 has been changed to an engine company (No. 25) and twelve members appointed for constant service; making an addition to the department of five men.

Hose Co. No. 4 has been reorganized and made an engine company (No. 23) on Northampton street; making an addition of two men to the department.

A new hook and ladder company, located on Washington square, and known as No. 8, has been organized with fifteen permanent men.

A new hose company has been organized in South Boston, and known as No. 12; thereby adding to the department nine men.

Two new engine companies have been organized in the Highland District and known as Engine Co. No. 22, on Parker street, and Engine Co. No. 24, on Warren street, thus giving to the department twenty-two additional men; making a total of fifty-three men added to the department during the year. The company on Parker street was added in response to petitions from citizens of Wards 6 and 9 to cover the recently occupied lands in those wards.

The present condition of the department is shown in the accompanying statements: —

STEAM FIRE ENGINES.

No.	Name.	Location.	Put into Service.	Weight as drawn to fires.	Galls. per minute.	No. of men.	Permanently Employed.	Temporarily Employed.
1	Mazeppa	Dorchester, near Fourth, S. B.	September 17, 1872	8,600	650	11	3	8
2	S. R. Spinney	Fourth, between L and K, S. B.	August 7, 1872	9,200	500	11	3	8
3	Eagle	Washington, near Dover	July 1, 1867	8,100	500	11	3	8
4	Barnicoat	Bulfinch street	November 7, 1867	8,510	500	12	12	0
5	Elisha Smith	Marion street, E. B.	December 24, 1867	8,650	500	11	3	8
6	Melville	Wall street	December 19, 1864	10,045	600	12	4	8
7	T. C. Amory	East street	September 25, 1870	8,970	500	12	12	0
8	Northern Liberty	Salem street	April 26, 1869	7,200	. . .	12	4	8
9	Maverick	Paris street, E. B.	October 14, 1872	9,300	500	12	4	8
10	Cataract	Mt. Vernon, corner River	February 1, 1870	8,610	400	11	3	8
11	John S. Damrell	Sumner street, E. B.	February 15, 1867	8,500	400	11	3	8
12	Warren	Dudley and Winslow, Roxbury	September 9, 1864	6,800	600	12	4	8
13	Tremont	Cabot street, Roxbury	April, 1870	7,500	. . .	12	4	8
14	Dearborn	Centre street, Roxbury	September 17, 1870	7,525	500	12	4	8
15	Walter E. Hawes	Dorchester av. & Broadway, S. B.	December, 1869	8,500	500	11	3	8
16	S. H. Hebard	Temple street, Ward 16	October 20, 1869	7,100	450	12	4	8
17	Protector	Meeting House Hill, Ward 16	March, 1866	8,350	600	12	4	8
18	Torrent	Harvard street, Ward 16	January 1, 1870	7,347	300	11	3	8
19	Alert	Norfolk street, Ward 16	January 1, 1870	7,500	300	11	3	8

20	Independence	Walnut street, Ward 16	January 1, 1870	7,450	400	11	3	8
21	J. H. Upham	Boston street, Ward 16	December 27, 1869 . . .	6,950	400	11	3	8
22*	Nathaniel Seaver . . .	Parker street, Roxbury	September 1, 1873	7,250	400	11	3	8
23	Chester	Northampton street	April 1, 1873	9,300	500	11	3	8
24†	. . . .	Warren and Quincy, Roxbury . .	November 1, 1873	. . . .	. . .	11	3	8
25‡	Washington	Washington square	October 1, 1873	. . . .	. . .	12	12	0

* This company are running old Engine No. 10, which has been put in thorough repair.
‡ " " " " a relief Engine for the present.
† " " " " " " " " " "

HORSE HOSE COMPANIES.

No.	Name.	Location.	Put into Service.	Weight as drawn to fires.	No. of Men.	Permanently Employed.	Temporarily Employed.
2	Union	Hudson street	September 17, 1870	3,080	9	1	8
3	Franklin	North Grove street	July 4, 1868	3,175	9	1	8
5	Suffolk	Shawmut avenue.	September 17, 1870	2,850	9	1	8
6	William Woolley	391 Chelsea street, E. B.	September 1, 1860	2,400	9	1	8
7	Eliot	Tremont street, Roxbury	July 4, 1868	2,830	9	1	8
8	Tremont	Church street	September 17, 1870	3,120	9	1	8
9	Lawrence	B street, S. Boston	November 1, 1860	2,120	9	1	8
10	Bradlee	Dorchester street, S. Boston	March 1, 1868	2,500	9	1	8
12	Wm. Gaston	Fourth and O streets, S. Boston	June 17, 1873	2,800	9	1	8

HOOK AND LADDER COMPANIES.

No.	Name.	Location.	Put into service.	Ladders.	Hooks.	Crotch Poles.	Axes.	Rakes.	Guy Ropes.	Dogs.	Hammers.	Lanterns.	No. of Men.	Permanently Employed.	Temporarily Emplo
1	Warren	Warren square	Dec. 20, 1869 .	18	2	6	8	9	8	10	2	5	24	1	23
2	Washington	Sumner street, E. B. . . .	. . . .	17	2	4	4	4	4	9	2	2	20	1	19
3	Franklin	Harrison Avenue	June 1, 1860 .	20	2	9	5	5	6	12	2	5	24	1	23
4	Washington	Eustis street, Roxbury . .	April 13, 1872.	14	2	8	8	5	4	8	2	3	20	1	19
5	Hancock	Fourth street, S. B. . . .	March 3, 1870 .	18	2	5	6	8	7	17	2	3	20	1	19
6	Geo. L. Burt	Temple street, Ward 16 .	Aug. 18, 1873 .	22	2	7	2	4	4	6	2	1	9	1	8
7	Everett	Meeting House Hill, W'd 16	January, 1869 .	14	2	4	4	4	4	8	2	4	9	1	8
8*	John A. Andrew . .	Washington square . . .	October, 1873 .	13	2	3	4	6	4	6	2	2	15	15	0

* This company are running the old Hook and Ladder Carriage, No. 1, for the present.

EXTINGUISHER CORPS.

No.	Location.	Weight as drawn to fires.	No. of Extinguishers.	No. of Men.	Permanently Employed.	Temporarily Employed.
1	Bulfinch street	4,000	(Self-acting Engine.)	3	2	1
2	Harrison avenue	3,250	12	2	1	1
3	Paris street, East Boston	2,610	15	1	1	0
4	Tremont street, Roxbury	3,100	12	1	1	0

FIRE BOAT.

No.	Name.	Location.	Put into service.	No. of Men.	Permanently Employed.	Temporarily Employed.
1	Wm. M. Flanders	North side Central wharf . . .	January 1, 1873	7	7	0

Number of horses belonging to the department, 96.

Number of feet of leading hose, 63,456; good quality, 56,621; middling quality, 1,485; poor quality, 5,350.

Number of feet of section hose, 500.

Number of Hydrants established up to Nov. 1, 1873.

Location.	No. May 1 1873.	Added	Style.		Total.	Aban-doned.	Style abandoned.	No. now in service.
			Lowry's.	Boston				
Bos'n Proper	1105	102	101	1	1207	38	1 Lowry—37 Boston	1169
So. Boston .	394	15	14	1	409	5	5 "	404
E. Boston .	236	8	8	. . .	244	1	1 "	243
Roxbury . .	561	58	54	4	619	1	1 "	618
Dorchester .	320	104	103	1	424	. .	. . . .	424
Deer Island.	14	. . .	. . .	. . .	14	. .	. . . .	14
Total . . .	2630	287	280	7	2917	45	1 44	2872

There are 179 reservoirs where water can be obtained in case of fire, divided as follows, viz.: —

Boston	96
South Boston	18
East Boston	13
Roxbury	41
Dorchester	11
Total	179

There are 177 fire-alarm boxes, divided as follows, viz.: —

Boston	69
South Boston	22
East Boston	24
Roxbury	33
Dorchester	29
	177

RECAPITULATION.

No. Steam-Engines in service	25
“ Horse Hose-Carriages	9
“ Hook and Ladder Carriages	8
“ Extinguisher Corps	4
Fire Boat	1
Insurance Brigade	1
Coal Wagons	12
Whole number men belonging to department	515

Namely: — 1 chief engineer, 14 assistant engineers, 1 secretary board of engineers, 2 clerks, 42 foremen of companies, 25 engineers of engines, 55 drivers, 25 firemen, 272 hosemen, 120 hook and ladder men, 1 captain of fire boat, 1 mate, 1 steward, 1 engineer, 1 foreman, 1 deck hand, 16 insurance brigade.

No. of men constantly employed*	153
“ “ “ doing duty only in case of fire	369

No. of horses in dept.	96
“ feet leading hose	63,456
“ “ suction “	500
“ hydrants in service	2,872
“ reservoirs	179
“ of fire-alarm boxes	177

The members of the insurance brigade belong to the department as at present organized, but they are paid for their services by the Boston Board of Underwriters. The City Solicitor has recently furnished an opinion to the effect that the members of the brigade cannot be considered as regular members of the department, for whom the city should be at the expense of furnishing accommodations.

It will be seen, by reference to the statement relating to the number of hydrants in service, that there have been two hundred and eighty Lowry hydrants introduced since the first of May last. The promptness of the Water Board in responding to the wishes of this department by enlarging the street mains in the city proper, and furnishing improved hydrants, is deserving of high commendation.

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* This statement does not cover the Fire-Alarm Department.

Inventions for the extinguishment of fires and for the preservation of life in case of fires have been very numerous since the conflagration of last year, and the committee have given much attention and numerous hearings to parties interested in securing the introduction of new methods.

The estimated value of the property belonging to the department is as follows : —

ENGINE HOUSES.

	Location.	No. of feet in lot.	Estimated Value.		Total Value.
			Land.	Building.	
No. 1	*Dorchester street	8,167	$12,200	$50,000 00	$62,200 00
2	Fourth street	3,101	2,500	15,000 00	17,500 00
3	Washington street	1,007	5,000	8,000 00	13,000 00
4	†Bulfinch street	6,075	36,400	60,000 00	96,400 00
5	Marion street	1,647	1,000	15,000 00	16,000 00
6	Wall street	1,372	3,400	12,000 00	15,400 00
7	East street	1,893	5,600	15,000 00	20,600 00
9	Paris street	4,000	5,000	18,000 00	23,000 00
10	River street	1,886	5,600	15,000 00	20,600 00
11	‡Sumner street	4,010	2,000	§	2,000 00
12	Cor. Winslow and Dudley sts.	4,285	10,700	22,586 70	33,000 00
13	Cabot street	4,770	3,800	15,000 00	18,800 00
14	Centre street	5,710	4,900	16,000 00	20,900 00
15	Dorchester avenue	2,700	6,800	20,000 00	26,800 00
16	River street	12,736	1,700	15,000 00	16,700 00
17	Meeting House Hill	. . . . . .	. . . . . .	15,000 00	15,000 00
18	Harvard street	10,225	1,300	15,000 00	16,300 00
19	Norfolk street	7,683	600	15,000 00	15,600 00
20	Walnut street	9,000	1,500	15,000 00	16,500 00
21	Boston street	9,355	4,700	16,000 00	20,700 00
22	Parker street	. . . . . .	Land not owned by the city.	‖2,850 00	2,850 00
25	Washington square	. . . . . .	On City Land.	‖2,400 00	2,400 00

* Occupied in part also as an Armory and Ward-room.

† Occupied in part by National Lancers.

‡ Occupied in part by Hook and Ladder No. 2.

§ For value of building, see Hook and Ladder No. 2.

‖ Temporary structures.

HOSE HOUSES.

	Location.	No. of feet in lot.	Estimated Value.		Total Value.
			Land.	Buildings.	
No. 1	Salem street	2,568	$7,100	$18,000	$25,100
2	Hudson street	739	2,217	5,000	7,200
3	North Grove street	3,918	5,900	14,000	19,900
4	Northampton street	3,445	6,900	10,000	16,900
5	Shawmut avenue	889	2,600	7,000	9,600
6	Chelsea street	1,346	400	13,000*	13,400
7	Tremont street	4,350	9,800	21,000	30,800
8	Church street*	3,412	9,400	25,000	34,400
9	B street	1,804	1,900	14,000	15,900
10	Washington Village	1,610	10,500	7,000	17,500
12	Corner of O and Fourth sts .	4,000	3,000	20,000	23,000

* Occupied in part by a Ward-room.

HOOK AND LADDER HOUSES.

	Location.	No. of feet in lot.	Estimated Value.		Total Value.
			Land.	Building.	
No. 1	Friend street	1,676	$10,000	$12,000	$22,000
2	Orleans street	4,010	*	20,000	* . . . .
3	Harrison avenue	3,755	9,400	18,000	27,400
4	Eustis street	760	1,500	10,000	11,500
5	Fourth street	3,727	5,600	15,000	20,600
6	Cor. River and Temple sts. .	. . . .	†	. . . .	. . . .
7	Meeting House Hill	. . . .	. . . .	3,000	. . . .

* For value of land, see Engine No. 11.
† For value of land, see Engine No. 16.

MOVABLE PROPERTY.

1	fire-boat and fixtures,	at	$35,000 00	$35,000
29	steam fire-engines,	at	4,000 00	116,000
1	Babcock chemical engine,	at	2,000 00	2,000
2	Gibb & Gordon chemical engines,	at	250 00	500
22	hose tenders,	at	250 00	5,500
23	horse hose-carriages,	at	650 00	14,950
9	hook and ladder trucks, complete,	at	2,500 00	22,500
4	extinguisher wagons,	at	400 00	1,600
12	coal-wagons,	at	300 00	3,600
96	horses,	at	350 00	33,600
48	double harnesses,	at	200 00	9,600
33	single "	at	100 00	3,300
63,456	feet of hose	at	1 25	79,320
10	pungs,	at	125 00	1,250
500	feet of suction hose,	at	6 50	3,250
24	hydrant heads (large),	at	150 00	3,600
6	hydrant heads (small),	at	65 00	390
35	fire-stations, furniture and supplies,*	at	1,000 00	35,000
48	fire extinguishers,	at	50 00	2,400
1	Goddard buggy,			300
2	Concord buggies (open),	at	25 00	50
1	sleigh			50
	Total value of movable property			$373,760

The appropriation made for the maintenance of the department for the financial year 1873–74, was $551,316.00.

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* The temporary stations on Parker street and Washington square have been partially furnished only, and are not included in this statement.

The expenditures have been as follows: —

May	draft	$130,446 48
June	“	35,270 59
July	“	43,819 14
August	“	39,267 94
September	“	38,447 56
October	“	38,329 65
November	“	46,084 10
		$372,665 46
Unpaid contracts, chargeable to this appropriation		16,800 00
		$389,465 46
Estimate of expenses required for maintenance of department during the remainder of the financial year, including salaries of commissioners and permanent force recently organized, and to be organized for the Mason-street station, at $50,000 per month, during the remaining five months		$250,000 00
		$639,465 46
		$551,316 00
Estimated excess of expenditures over appropriation		$88,149 46

In conclusion, the committee desire to acknowledge the obligations they are under to the Chief Engineer for the valuable assistance which he has given them, and they also desire to commend in the highest manner the great energy and fearlessness which he has invariably shown in the discharge of his difficult and dangerous duties. The long and faithful services of the present members of the Board of Engineers and their Secretary entitle them to the thanks of the citizens.

Respectfully submitted,

LEONARD R. CUTTER,
JOHN T. CLARK,
SOLOMON B. STEBBINS,
GEORGE L. BURT,
JAMES F. MARSTON,
WILLIAM H. JONES,
FREDERICK PEASE,
ELIJAH B. HINE,
Committee.

City Document.—No. 124.

CITY OF BOSTON.

WIDENING

OF

MAGAZINE STREET.

1873.

CITY OF BOSTON.

In Board of Street Commissioners,
November 22, 1873.

Resolved, That the safety and convenience of the inhabitants of the city require that Magazine street should be widened, and laid out through land of Bernard Foley and others to Dudley street; and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to James Dolan, jr., bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring sixty-nine and $\frac{66}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Frederick Neff, seven and $\frac{70}{100}$ feet; southeastwardly by the present line of Magazine street, seventy-one and $\frac{36}{100}$ feet; and northeastwardly by Norfolk avenue, six and $\frac{92}{100}$ feet; containing five hundred and nine square feet, more or less.

A parcel of land belonging to the Heirs of Frederick Neff, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring fifty-eight and $\frac{27}{100}$ feet; southwestwardly by land hereinafter described as taken from Dennis O'Brien, eight and $\frac{43}{100}$ feet; southeastwardly by the present line of Magazine street, fifty-seven and $\frac{90}{100}$ feet; and northeastwardly by land before described as taken from James Dolan, jr., seven and $\frac{70}{100}$ feet; containing four hundred and sixty-eight square feet, more or less.

A parcel of land belonging to Dennis O'Brien, bounded as follows, viz. : northwestwardly by the proposed line of widening of Magazine street, there measuring fifty and $\frac{40}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Samuel W. Weld, nine feet; southeastwardly by the present line of Magazine street, fifty and $\frac{50}{100}$ feet; and northeastwardly by land before described as taken from the heirs of Frederick Neff, eight and $\frac{43}{100}$ feet; containing four hundred and forty square feet, more or less.

A parcel of land belonging to the Heirs of Samuel W. Weld, bounded as follows, viz. : northwestwardly by the proposed line of widening of Magazine street, there measuring forty-eight and $\frac{87}{100}$ feet; southwestwardly by land hereinafter described as taken from John Bowhan, eight and $\frac{47}{100}$ feet; southeastwardly by the present line of Magazine street, forty-nine feet; and northeastwardly by land before described as taken from Dennis O'Brien, nine feet; containing four hundred and thirty-one square feet, more or less.

A parcel of land belonging to John Bowhan, bounded as follows, viz. : northwestwardly by the proposed line of widening of Magazine street, there measuring thirty feet; southwestwardly by land hereinafter described as taken from Mary, wife of Samuel Dimmock, nine and $\frac{29}{100}$ feet; southeastwardly by the present line of Magazine street, thirty feet; and northeastwardly by land before described as taken from the heirs of Samuel W. Weld, eight and $\frac{47}{100}$ feet; containing two hundred and sixty-six square feet, more or less.

A parcel of land belonging to Mary, wife of Samuel Dimmock, bounded as follows, viz. : northwestwardly by the proposed line of widening of Magazine street, there measuring ninety-eight and $\frac{24}{100}$ feet; southwestwardly by George street, nine and $\frac{58}{100}$ feet; southeastwardly by the present line of Magazine street, ninety-six and $\frac{83}{100}$ feet; and northeastwardly by land before described as taken from John Bowhan, nine and $\frac{29}{100}$ feet; containing nine hundred and fifteen square feet, more or less.

A parcel of land belonging to the Heirs of Joseph Bumstead, Charles Pope, trustee; bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring fifty-four and $\frac{56}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Daniel Dowd, ten and $\frac{44}{100}$ feet; southeastwardly by the present line of Magazine street fifty-four and $\frac{52}{100}$ feet; and northeastwardly by George street, nine and $\frac{55}{100}$ feet; containing five hundred and forty-one square feet, more or less.

A parcel of land belonging to the Heirs of Daniel Dowd, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring thirty-nine and $\frac{50}{100}$ feet; southwestwardly by other land hereinafter described as taken from the heirs of Daniel Dowd, ten and $\frac{83}{100}$ feet; southeastwardly by the present line of Magazine street forty feet; and northeastwardly by land before described as taken from the heirs of Joseph Bumstead, ten and $\frac{44}{100}$ feet; containing four hundred and twenty-one square feet, more or less.

Another parcel of land belonging to the Heirs of Daniel Dowd, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring thirty-nine and $\frac{42}{100}$ feet; southwestwardly by other land hereinafter described as taken from the heirs of Daniel Dowd, eleven and $\frac{38}{100}$ feet; southeastwardly by the present line of Magazine street, forty feet; and northeastwardly by other land before described as taken from the heirs of Daniel Dowd, ten and $\frac{83}{100}$ feet; containing four hundred and forty-one square feet, more or less.

Another parcel of land belonging to the Heirs of Daniel Dowd, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring thirty-five and $\frac{79}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Abraham Barker, eight and $\frac{64}{100}$ feet; southeastwardly by the present line of Magazine street, thirty-five and $\frac{75}{100}$ feet; and northeastwardly by other land before described as taken from the heirs of Daniel Dowd, eleven and $\frac{38}{100}$ feet; containing three hundred and fifty-eight square feet, more or less.

A parcel of land belonging to the Heirs of Abraham Barker, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring thirty and $\frac{13}{100}$ feet; southwestwardly by land hereinafter described as taken from Joseph Kyle, six and $\frac{54}{100}$ feet; southeastwardly by the present line of Magazine street, thirty and $\frac{55}{100}$ feet; and northeastwardly by land before described as taken from the heirs of Daniel Dowd, eight and $\frac{64}{100}$ feet; containing two hundred and twenty-nine square feet, more or less.

A parcel of land belonging to Joseph Kyle, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring twenty-six and $\frac{2}{100}$ feet; southwestwardly by land hereinafter described as taken from Jerome Seidensticker, four and $\frac{35}{100}$ feet; southeastwardly by the present line of Magazine street, twenty-five and $\frac{92}{100}$ feet; and northeastwardly by land before described as taken from the heirs of Abraham Barker, six and $\frac{54}{100}$ feet; containing one hundred and forty-two square feet, more or less.

A parcel of land belonging to Jerome Seidensticker, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, there measuring four and $\frac{39}{100}$, and on a curve of one hundred and eighty feet radius, twenty-two and $\frac{98}{100}$ feet; southwestwardly by land hereinafter described as taken from David Gore, three and $\frac{14}{100}$ feet; southeastwardly by the present line of Magazine street, twenty-seven and $\frac{44}{100}$ feet; and northeastwardly by land before described as taken from Joseph Kyle, four and $\frac{35}{100}$ feet; containing ninety-seven square feet, more or less.

A parcel of land belonging to DAVID GORE, bounded as follows, viz.: northwestwardly by the proposed line of widening of Magazine street, a curve of one hundred and eighty feet radius, there measuring thirty-five and $\frac{9}{100}$ feet; southwestwardly by land hereinafter described as taken from James B. Graham, four and $\frac{14}{100}$ feet; southeastwardly by the present line of Magazine street, thirty-five and $\frac{28}{100}$ feet; and northeastwardly by land before described as taken from Jerome Scidensticker, three and $\frac{14}{100}$ feet; containing one hundred and sixteen square feet, more or less.

A parcel of land belonging to JAMES B. GRAHAM, bounded as follows, viz.: northwardly by the proposed line of widening of Magazine street, there measuring, on two curves, of one hundred and eighty and of one hundred and seventy-three feet radius, eleven and $\frac{33}{100}$, and forty-six and $\frac{14}{100}$ feet, respectively; westwardly by the present line of Magazine street, $\frac{20}{100}$ of a foot; southwardly by the same, fifty-nine and $\frac{68}{100}$ feet; and northeastwardly by land before described as taken from David Gore, four and $\frac{14}{100}$ feet; containing one hundred and sixty-eight square feet, more or less.

A parcel of land belonging to JOHN BANNON, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring fifty-four and $\frac{64}{100}$ feet; northeastwardly by Norfolk street, three and $\frac{78}{100}$ feet; northwestwardly by the present line of Magazine street, fifty-four feet; and southwestwardly by land hereinafter described as taken from Ellen Connell, three and $\frac{29}{100}$ feet; containing one hundred and ninety-one square feet, more or less.

A parcel of land belonging to ELLEN CONNELL, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring twenty-seven feet; northeastwardly by land before described as taken from John Bannon, three and $\frac{29}{100}$ feet; northwestwardly by the present line of Magazine street, twenty-seven feet; and southwestwardly by land hereinafter described as taken from Patrick Connell, two and $\frac{93}{100}$ feet; containing eighty-four square feet, more or less.

A parcel of land belonging to Patrick Connell, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring twenty-seven feet; northeastwardly by land before described as taken from Ellen Connell, two and $\frac{93}{100}$ feet; northwestwardly by the present line of Magazine street, twenty-seven feet; and southwestwardly by land hereinafter described as taken from the heirs of Samuel W. Weld, two and $\frac{58}{100}$ feet; containing seventy-four square feet, more or less.

A parcel of land belonging to the Heirs of Samuel W. Weld, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring thirty-one and $\frac{1}{100}$ feet; northeastwardly by land before described as taken from Patrick Connell, two and $\frac{58}{100}$ feet; northwestwardly by the present line of Magazine street, thirty-one feet; and southwestwardly by land hereinafter described as taken from Patrick Connell, one foot and $\frac{69}{100}$ of a foot; containing sixty-six square feet, more or less.

A parcel of land belonging to Patrick Connell, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring forty-five and $\frac{7}{100}$ feet; northeastwardly by land before described as taken from the heirs of Samuel W. Weld, one foot and $\frac{69}{100}$ of a foot; northwestwardly by the present line of Magazine street, forty-five and $\frac{7}{100}$ feet; and southwestwardly by Clayton place, one foot and $\frac{15}{100}$ of a foot; containing sixty-four square feet, more or less.

A parcel of land belonging to W. Elliot Woodward, bounded as follows, viz.: southeastwardly by the proposed line of widening of Magazine street, there measuring two hundred thirty-two and $\frac{6}{100}$ feet; again southeastwardly by the same, on a curve of two hundred and twenty feet radius, nine and $\frac{40}{100}$ feet; southwestwardly by land hereinafter described as taken from E. S. Johnson, sixteen and $\frac{20}{100}$ feet; and northwestwardly by the present line of Magazine street, fifty-seven and $\frac{8}{100}$, forty-five, sixty, and seventy-six and $\frac{59}{100}$ feet; containing sixteen hundred and ninety-one square feet, more or less.

A parcel of land belonging to EZEKIEL S. JOHNSON, bounded as follows, viz.: southeastwardly, on a curve of two hundred and twenty feet radius, by the line of widening of Magazine street, there measuring thirty-two and $\frac{5}{100}$ and twenty-eight and $\frac{4}{100}$ feet; southwestwardly, by land herein after described as taken from J. H. Chadwick, sixteen and $\frac{3}{100}$ feet; northwestwardly, by the present line of Magazine street, twenty-nine and $\frac{17}{100}$ feet, and thirty and $\frac{83}{100}$ feet; and northeastwardly, by land before described as taken from W. Elliot Woodward, sixteen and $\frac{20}{100}$ feet; containing one thousand square feet, more or less.

A parcel of land belonging to J. H. CHADWICK, bounded as follows, viz.: southwardly by the proposed line of widening of Magazine street, on a curve of two hundred and twenty feet radius, there measuring fifteen and $\frac{34}{100}$ feet; again southwardly by the said line of widening, seventy-seven and $\frac{93}{100}$ feet; southwestwardly by land hereinafter described as taken from the Little Sisters of the Poor, forty and $\frac{52}{100}$ feet; northwardly by the present line of Magazine street, one hundred three and $\frac{50}{100}$ feet; and northeastwardly by land before described as taken from Ezekiel S. Johnson, sixteen and $\frac{3}{100}$ feet; containing twenty-two hundred and forty-one square feet, more or less.

A parcel of land belonging to the INSTITUTION OF THE LITTLE SISTERS OF THE POOR OF BOSTON, bounded as follows, viz.: southwardly by the southerly line of the proposed extension of Magazine street, there measuring one hundred sixty-four and $\frac{64}{100}$ feet; northwestwardly by land hereinafter described as taken from Bernard Foley and Owen

Nawn, ninety-one and $\frac{2}{100}$ feet; again, northwestwardly by the same, thirty and $\frac{80}{100}$ feet; northwardly by the northerly line of the said proposed extension, thirteen and $\frac{85}{100}$ feet; westwardly by the westerly line of said proposed extension, on a curve of ten and $\frac{20}{100}$ feet radius, twenty-three and $\frac{74}{100}$ feet; northeastwardly by the present line of Magazine street, twenty-nine and $\frac{92}{100}$ feet; and again northeastwardly by land before described as taken from J. H. Chadwick, forty and $\frac{52}{100}$ feet; containing thirty-five hundred and forty-nine square feet, more or less.

A parcel of land belonging to Bernard Foley and Owen Nawn, bounded as follows, viz.: southwardly by the southerly line of the proposed extension of Magazine street, there measuring eighty-six and $\frac{83}{100}$ feet; westwardly by Dudley street, forty feet; northwardly by the northerly line of the said proposed extension, one hundred ninety-eight and $\frac{15}{100}$ feet; southeastwardly by land before described as taken from the Little Sisters of the Poor, thirty and $\frac{80}{100}$ feet; and again southeastwardly by the same, ninety-one and $\frac{2}{100}$ feet; containing sixty-five hundred and seventeen square feet, more or less.

And Whereas due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, It is Therefore Ordered, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, according to a plan of the said widening and extension made by Thos. W. Davis, City Surveyor, dated June 5, 1872, and deposited in the office of the said City Surveyor. And this Board doth adjudge that the expense of widening and extending the said Magazine street, as aforesaid, will amount to twenty-four thousand fifteen and $\frac{95}{100}$ dollars; and that the damages to the estates, parts of which are taken as above, are the sum set against them respectively on the schedule hereto annexed: —

Estimate of Damages Occasioned by the Widening and Extension of Magazine street, 1873.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before laying out, widening, or extending.	Value of buildings after laying out, widening, or extending.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.
James Dolan, jr.	. . . . . .	509	$1 00	$509 00	. . . . . .	. . . . . .	. . . . . .	$150 00	$659 00
Heirs Frederick Neff	. . . . . .	468	75	351 00	. . . . . .	. . . . . .	. . . . . .	136 00	487 00
Dennis O'Brien	. . . . . .	440	75	330 00	. . . . . .	. . . . . .	. . . . . .	40 00	370 00
Heirs Samuel W. Weld	. . . . . .	431	60	258 60	. . . . . .	. . . . . .	. . . . . .	. . . . . .	258 60
John Bowhan	. . . . . .	266	75	199 50	. . . . . .	. . . . . .	. . . . . .	. . . . . .	199 50
Mary Dimmock	. . . . . .	915	90	823 50	. . . . . .	. . . . . .	. . . . . .	. . . . . .	823 50
Heirs Joseph Bumstead	. . . . . .	541	1 00	541 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	541 00
Heirs Daniel Dowd	. . . . . .	421	85	357 85	. . . . . .	. . . . . .	. . . . . .	. . . . . .	357 85
" " "	. . . . . .	441	85	374 85	. . . . . .	. . . . . .	. . . . . .	. . . . . .	374 85
" " "	. . . . . .	358	90	322 20	. . . . . .	. . . . . .	. . . . . .	. . . . . .	322 20
Heirs of Abraham Barker	. . . . . .	229	90	206 10	. . . . . .	. . . . . .	. . . . . .	. . . . . .	206 10
Joseph Kyle	. . . . . .	142	90	127 80	. . . . . .	. . . . . .	. . . . . .	25 00	152 80
Jerome Seidensticker	. . . . . .	97	90	87 30	. . . . . .	. . . . . .	. . . . . .	25 00	112 30
David Gore	. . . . . .	116	90	104 40	. . . . . .	. . . . . .	. . . . . .	25 00	129 40

James B. Graham	. . . . . .	168	1 00	168 00	. . . . . .	. . . . . .	. . . . . .	40 00	208 00
John Bannon	. . . . . .	191	1 00	191 00	. . . . . .	. . . . . .	. . . . . .	30 00	221 00
Ellen Connell	. . . . . .	84	75	63 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	63 00
Patrick Connell	. . . . . .	74	75	55 50	. . . . . .	. . . . . .	. . . . . .	. . . . . .	55 50
Heirs Samuel W. Weld	. . . . . .	66	75	49 50	. . . . . .	. . . . . .	. . . . . .	. . . . . .	49 50
Patrick Connell	. . . . . .	64	85	54 40	. . . . . .	. . . . . .	. . . . . .	. . . . . .	54 40
W. Elliot Woodward	. . . . . .	1691	85	1,437 35	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,437 35
Ezekiel S. Johnson	. . . . . .	1000	90	900 00	8,500 00	6,150 00	. . . . . .	2,350 00	3,250 00
J. H. Chadwick	. . . . . .	2241	90	2,016 90	. . . . . .	. . . . . .	. . . . . .	. . . . . .	2,016 90
Little Sisters of the Poor of Boston	. . . . . .	3549	90	3,194 10	. . . . . .	. . . . . .	. . . . . .	. . . . . .	3,194 10
Bernard Foley and Owen Nawn	. . . . . .	6517	1 30	8,472 10	. . . . . .	. . . . . .	. . . . . .	. . . . . .	8,472 10
	. . . . . .	21,019	. . . . . .	$21,194 95	$8,500 00	$6,150 00	. . . . . .	$2,821 00	$24,015 95

City Document. — *No.* 125.

CITY OF BOSTON.

EXTENSION OF

EUSTIS STREET,

TO

MAGAZINE STREET.

1873.

CITY OF BOSTON.

In Board of Street Commissioners,
November 22, 1873.

Resolved, That the safety and convenience of the inhabitants of the city require that Eustis Street should be extended to Magazine street, and that the grade of said extension should be established, according to a plan and profile hereinafter referred to; and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to Rodney S. Lakin, bounded as follows, viz.: northeastwardly by the northeasterly line of the proposed extension of Eustis street, there measuring seventy feet; southeastwardly by land hereinafter described as taken from the heirs of Daniel Dowd, twenty-three feet; southwestwardly by land hereinafter described as taken from Sylvester H. Roper, seventy and $\frac{41}{100}$ feet; and northwestwardly by the line of the present termination of Eustis street, twenty-two and $\frac{58}{100}$ feet; containing fifteen hundred and ninety-nine square feet, more or less.

A parcel of land belonging to Sylvester H. Roper, bounded as follows, viz.: northeastwardly by land before described as taken from Rodney S. Lakin, there measuring seventy and $\frac{41}{100}$ feet; southeastwardly by land hereinafter described as taken from the heirs of Abraham Barker, seventeen feet; southwestwardly by the southwesterly line of the proposed extension of Eustis street, sixty-three and $\frac{9}{100}$ and seven and $\frac{43}{100}$ feet; and northwestwardly by the line of the present termination of Eustis street, nineteen and $\frac{66}{100}$ feet;

containing twelve hundred and twenty-one square feet, more or less.

A parcel of land belonging to the Heirs of Daniel Dowd, bounded as follows, viz.: northeastwardly by the northeasterly line of the proposed extension of Eustis street, there measuring sixty-three and $\frac{57}{100}$ feet; southeastwardly by the line of widening of Magazine street, as established by a resolve and order of this Board of Street Commissioners of even date herewith, twenty-three and $\frac{68}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Abraham Barker, sixty-four and $\frac{15}{100}$ feet; and northwestwardly by land before described as taken from Rodney S. Lakin, twenty-three feet; containing fourteen hundred and eighty-four square feet, more or less.

A parcel of land belonging to the Heirs of Abraham Barker, bounded as follows, viz.: northeastwardly by land before described as taken from the heirs of Daniel Dowd, there measuring sixty-four and $\frac{15}{100}$ feet; southeastwardly by the line of widening of Magazine street, as established by a resolve and order of this Board of Street Commissioners of even date herewith, sixteen and $\frac{32}{100}$ feet; southwestwardly by the southwesterly line of the proposed extension of Eustis street, sixty-four and $\frac{51}{100}$ feet; and northwestwardly by land before described as taken from Sylvester H. Roper, seventeen feet; containing ten hundred and seventy-four square feet, more or less.

And Whereas due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, It is Therefore Ordered, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, and that the grade thereof be established according to a plan of the said extension and a profile of the grade thereof, made by Thos. W. Davis, City Surveyor, dated June 5, 1872, and deposited in his office.

And this Board doth adjudge that the expense of extending the said Eustis street, as aforesaid, will amount to eleven thousand six hundred forty and $\frac{20}{100}$ dollars; and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

Estimate of Damages occasioned by the Extension of Eustis to Magazine Street, 1873.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before extending.	Value of buildings after extending.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.
Rodney S. Lakin	Eustis st.	1,599	$ 90	$1,439 10	$3,000	$700	. . . . . .	$2,300	$3,739 10
Sylvester H. Roper	" "	1,221	90	1,098 90	3,000	1,300	. . . . . .	1,900	2,998 90
Heirs of Daniel Dowd	Magazine street.	1,484	90	1,335 60	2,200	1,200	. . . . . .	1,100	2,435 60
Heirs of Abraham Barker	26	1,074	90	966 60	2,200	700	. . . . . .	1,500	2,466 60
		5,378	. . . . . .	$4,840 20	$10,400	$3,900	. . . . . .	$6,800	$11,640 20

City Document. — *No.* 126.

CITY OF BOSTON.

REQUEST

OF THE

Committee on Common and Public Grounds

FOR

AN ADDITIONAL APPROPRIATION.

CITY OF BOSTON.

In Common Council, Nov. 20, 1873.

The Joint Standing Committee on Common and Public Grounds beg leave to represent that an additional appropriation will be required to meet the necessary expenses of their department during the remainder of the financial year.

The expenditures for the seven months ending November 1st are as follows: —

Salary of Superintendent	$1,166	67
Food for deer, ducks and swans	185	62
Watering streets	1,000	00
Settees, signs, railing around fountain and urinal	1,964	71
Bird-houses	324	00
Tools, machines and hardware	1,249	43
Printing and stationery	13	50
Advertising	120	02
Committee expenses	421	60
Common — Labor, Teaming, Gravel, etc.	16,730	22
Public Garden — Labor, etc.	16,733	86
Chester Square — Labor, etc.	2,054	21
Commonwealth avenue — Labor, etc.	5,150	96
Amount carried forward	$47,205	80

Amount brought forward	$47,205 80
East Boston — Labor, etc.	662 99
Fountain Square	342 40
Madison Square — Labor, etc.	2,983 70
Meeting House Hill — Repairs on fences	11 75
Orchard Park — Labor, etc.	5,964 93
South Boston squares — Labor, etc.	10,862 10
South End squares — Labor, etc.	1,672 91
Street Trees — Labor	581 00
Lewis Park — Repairs on fence	22 92
Longwood Park — Labor, etc.	369 71
Washington Park — Labor, etc.	7,982 34
	$78,571 55

Appropriation for 1873-74	$80,000 00
Payments	78,571 55
Balance unexpended	$1,428 45

It appears from the statement of the Superintendent that there will be required, in addition to the balance unexpended, the sum of twelve thousand dollars, namely: —

For labor	$7,000 00
To complete work already authorized by the City Council	5,000 00
	$12,000 00

It should be stated, in justice to the committee, that the appropriation made for the present financial year was ten thousand dollars less than the appropriation made for last year, and that the additional amount asked for at this time is for the purpose of covering expenditures ordered by the City Council, and not contemplated when the appropriation was made.

Respectfully submitted.

For the Committee,

JOHN T. CLARK, *Chairman.*

City Document. — *No.* 127.

CITY OF BOSTON.

REPORT

ON PROPOSED

ANNEXATION OF CHELSEA, ETC.,

TO

MIDDLESEX COUNTY.

In Board of Aldermen, Nov. 17, 1873.

Laid on the table, and ordered to be printed.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, November 17, 1873.

The Joint Standing Committee on Legislative Matters, who were requested to consider the expediency of petitioning the Legislature to annex the City of Chelsea, and the towns of Revere and Winthrop, to the County of Middlesex, having considered the subject, beg leave to submit the following

REPORT.

By an act of the General Court passed in 1738 "all the lands within the town of Boston, heretofore called Winnisimmet, Rumney Marsh, and Pullen Point," were "erected into a township by the name of Chelsea." In 1846 a portion of this territory was incorporated into a separate town by the name of North Chelsea. In 1852 a portion of North Chelsea was incorporated as the town of Winthrop.

Simultaneously with the passage of the original act establishing the City of Boston, an act was passed to regulate the administration of justice within the County of Suffolk (Chapter 109, 1821), which provided among other things that the town of Chelsea should not be liable to taxation for any county purposes until the Legislature should otherwise order.

In 1831 an act was passed providing that the connection which by law then subsisted between the City of Boston and the town of Chelsea should continue upon the following conditions: —

First, that Chelsea should release to Boston all right, title and interest to the county property, and should also relinquish to Boston the exclusive care and management of the court-houses, jails, house of correction, and all other lands, buildings, and establishments deemed county property; second, that Boston should be at liberty to apply from time to time to the Legislature for any alterations in the laws respecting County or Municipal Courts, or the administration of justice without interference from Chelsea; third, that Chelsea might at any time apply to the Legislature to be set off from the County of Suffolk to any other county without opposition from Boston.

It was provided further that the act should continue and be in force, so far as respects the connection between Boston and Chelsea, for the space of twenty years, and thence afterwards until the same should be altered by the Legislature, unless Chelsea should in the mean time apply to the Legislature and be set off; *provided*, however, that the rights of property acquired by Boston under the act should remain forever vested in said city. The substantial provisions of this act were subsequently incorporated into the General Statutes.

This connection existed undisturbed for a period of forty years — double the length of time contemplated by the statute. In 1871 the attention of the City Government of Boston was particularly directed to the subject by the receipt of a requisition from the County Commissioners of Middlesex for the payment of a large sum of money for damages caused by laying out a highway in Chelsea. Application was immediately made to the Legislature to relieve this city from such assessments in the future, and an act was passed in 1872 (Chapter 91) providing that no part of the expenses incurred by the laying out, widening, alteration, discontinuance, building, or repair of any highway, bridge, or other way of travel in the City of Chelsea, or the towns of Revere and Winthrop, should be assessed upon the County of Suffolk or the City of Boston.

All other expenses for county purposes continue to be borne exclusively by this city. The gross expenditures for the County of Suffolk during the present financial year are estimated at $325,000, and that sum has been appropriated by the City Council. Chelsea, Revere and Winthrop, containing about one-twelfth of the population of the county, pay no part of this sum, which, except for this peculiar arrangement, would be properly chargeable upon them in proportion to their valuation.

If an attempt is made to adjust this burden equitably by assessing these corporations for their portion of the county expenses, a question immediately arises as to the manner in which the assessment shall be made. It is hardly probable that the Board of Aldermen of Boston would be allowed to have the sole care and management of property for which the other portions of the county were taxed.

Apart from this, the connection is open to objection on account of the complications which it leads to in the management of the public business. Chelsea, Revere and Winthrop take part in the election of District Attorney, Sheriff, Clerks of Courts, Register of Probate, Register of Deeds and Commissioners of Insolvency for the County of Suffolk; and of County Commissioners for the County of Middlesex. The Street Commisisoners of Boston have the powers and duties of County Commissioners in Suffolk County, with certain exceptions.

The Treasurer of this city is, *ex officio*, the Treasurer of the county. The Aldermen constitute the County Board of Accounts, and have the care and management of the county buildings.

It is somewhat surprising that such an anomalous condition of things should have been suffered to continue so long; and it seems necessary only to call the attention f the government to the subject in order to have the present arrangement terminated, either by the annexation of Chelsea and the two towns to Boston, or to another county.

The Committee would, therefore, respectfully recommend the passage of the accompanying order.

For the Committee,

S. M. QUINCY, *Chairman.*

Ordered, That His Honor the Mayor be requested to petition the General Court, at its next session, for the passage of an act to set off the City of Chelsea and the towns of Revere and Winthrop from the County of Suffolk, and annex them to the County of Middlesex.

City Document.—No. 128.

CITY OF BOSTON.

REPORT

OF THE

CITY ENGINEER

ON PROPOSED REPAIRS OF THE

DRAW ON BROADWAY BRIDGE.

NOVEMBER, 1873.

In Board of Aldermen, Nov. 17, 1873.

Laid on the table, and ordered to be printed.

Attest:

S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

Office of City Engineer, City Hall,
Boston, Nov. 8th, 1873.

To Alderman Leonard R. Cutter, *Chairman Committee on Bridges*: —

Sir, — In compliance with the instructions of your Committee, given on the 5th of this month, I submit the following report and estimates relating to the Draw of the Broadway Bridge.

The report of Mr. Manley, Assistant Engineer in charge of bridges, transmitted to you last July and here reproduced, will point out the present unsafe condition of this structure: —

"Sir, — The condition of the draw, and draw foundations of Broadway bridge is briefly as follows: —

"The sixteen screw-piles upon which the draw rests, have settled unequally, and this is the cause of a great part of the trouble with the bridge.

"The weight is not equally distributed upon the piles, and those carrying the greatest load have settled most, so that a profile of the lower track shows two hills and two hollows. The difference between the highest and lowest point is 2¼ inches, one tower being 1¼ inches higher than the other when the draw is in position for use.

"There are two other movements, which I am confident have taken place in the bridge since its erection. First, the whole structure has moved towards the South Boston end. Second, the towers, and trusses with them, have also had an independent motion; the westerly tower to the north, and the easterly tower to the south. These movements are not susceptible of demonstration, but there is sufficient evidence to make me confident that they have taken place.

"They are indicated by the fittings at the end of the draw; by the striking of one truss against the truss of the fixed span; by the fitting of the draw pier, and by the towers not being exactly opposite each other.

"There is no cross-bracing in the floor of the draw, nor anything but the weight of the draw to prevent this warping motion.

"The towers are carried on the wheels directly under them, and the trusses are further supported by cross-beams, also carried on the wheels, making a base about 28 feet long, on which the trusses (together 160 feet long) are balanced. The track being uneven in height, the ends of this base, and the ends of the trusses with it, are alternately raised and lowered as the draw swings off. The greatest effect of this is seen when the draw is in place for vessels to pass through, at which time the roadway surface is warped so much that two diagonal corners of the draw are apparently 18 inches higher than the other two.

"The lower track is carried on a 15-inch I-beam; the upper flange of this beam is not a true circle, and as the towers roll over the portion farthest from the centre (which coincides nearly with the lowest place in the track), the great weight continually increases the variation, and there is danger that the beam will give way.

"This distortion of the lower track causes a part of the wheels to bear only on the outer edge of their faces, and they continually break and crumble.

"The settling of the piles has broken and disarranged the diagonal bracing between them, the upper end of the vertical driving-shaft is insecurely fastened, the machinery for arising the ends of the draw when in place, is in poor condition, the trusses are distorted by the pull of the tower rods, and under the best condition of things, that is to say, allowing that all the tower rods are equally strained, the strain on them is more than 20,000 lbs. per square inch of cross section.

"The track has a steel face 3″ by 1″ fixed in a groove ½ inch deep. The weight rolls this steel longer, thereby increasing the diameter of the track-circle, and tearing the track from its fastenings. The steel under the towers is rolled flat and thin, thereby increasing the inequalities of the track.

"Levels taken on the piles Feb. 14th, May 28th, and July 12th, all in 1873, show no perceptible change since the first date, and no longitudinal motion in the bridge has been discovered in that time.

"During the hottest weather of last year the expansion of the draw was so great that one truss struck the stationary part of the bridge, and it was found necessary to cut away the chord-bars of the fixed span.

"This trouble has not occurred this summer as yet, but may happen at any time.

"(Signed,) HENRY MANLEY.

"JULY 19th, 1873."

Since the date of the above report, the upper track has broken and has been repaired and strengthened at the weak point in a manner that will render it secure for a while; the steel track under the towers has worn down and splintered off to an extent that allows the wheels to almost bear upon the cast-iron base; other than these, no serious changes have taken place, and measurements taken yesterday show no further settling of the pile foundation.

The draw is safe for street traffic, and, as the season for the frequent passage of vessels is nearly closed, it is possible that it may be maintained through the winter without very expensive repairs; but only at a risk, as there are several points where failure is likely to occur when the draw is in motion. It should either receive thorough repair or be replaced by a new structure within a short time, not only because of its imperfect state, but also that it may be placed beyond danger of failure when it becomes necessary to interrupt the travel over Dover-street bridge to permit the rebuilding of the latter structure.

As Mr. Manley has stated, the chief defect is want of stability in the foundation, and there seems no effectual remedy except in building a new foundation, which shall have a much greater bearing surface and greater power to resist distortion or movement of its separate parts.

The weight brought upon each pile as the towers pass over it when the draw is in motion, produces a pressure per square foot of bearing surface of the base and flange of the pile two or three times greater than is allowable where a due regard for safety is had. The two piles over which the towers stand when in position for street travel are liable to receive a much greater load.

The acompanying plan, marked A, will show the essential features of the draw and its foundation.

The want of strength to resist a swaying motion and the want of bearing surface will be readily seen.

A number of estimates of cost of repairing and rebuilding are hereinafter presented.

The first, amounting to $16,000, is for repairing and strengthening both the foundation and the superstructure.

The work covered by this estimate, and which seems to be the least that can be done to place the draw in a temporarily safe condition, consists in levelling the lower track, putting in a new upper and lower track, new wheels and a greater number of them, new eccentrics, and diagonal floor ties, repairing the bracing of the foundation piles, staying with radial rods or struts the circular I-beam that supports the lower track, bracing and strengthening the towers, adding new suspension rods, etc.

It should be understood that even if the above-mentioned repairs are made, there is no surety that further settling of the piles will not take place and the work, in great part, have to be done over again.

The second estimate, amounting to $62,000, is for a new foundation (to be built substantially as shown on plans B and C), new centre-pivot turn-table, and strengthening and replacing old draw.

In this plan for a foundation the old piles are to be left to carry the track of the turn-table, and a stone centre pier to carry the centre-pivot, is to be built. The greater portion of the weight of the draw will be thrown upon the centre pier by means of a new turn-table, thus reducing the load on the piles to a weight they can safely bear. The bearing area of the base of the centre pier alone will be more than double that of the present foundation.

The only objection to this form of pier is the want of durability of the cast-iron piles. They will, undoubtedly, last for a number of years; but for how many it is impossible to say. They may, however, be so arranged that they can be taken out, one by one, and replaced by new ones, without disturbing the superstructure.

A saving of $12,000 is effected by replacing the old draw instead of building a new one. But as it is unnecessarily heavy, is wanting in lateral stiffness of trusses, and shows poor workmanship in its details, I am of opinion it would soon need further repair, and that its life would be but a short one, at best; therefore, if you should decide to build a new pier, it would seem judicious to also build a new draw. The material in the existing draw, if sold for old iron, would bring about $4,000, which amount added to the $12,000 mentioned above, gives the difference between estimates 2 and 3, equal to $16,000.

The third estimate, amounting to $78,000, is for a new foundation and new draw. The foundation to be the same as that already described. (See plans B and C.)

With the exception of the want of durability of the cast-iron piles, there seems to be no objection to urge against this form of structure.

The fourth estimate, amounting to $99,000, is for a new foundation, all of masonry (to be built substantially as shown on plans D and E), new turn-table, and old draw repaired and strengthened.

This form of foundation may be said to be imperishable, and not liable to need repair. The objections to replacing the old draw have been before stated.

The fifth estimate, amounting to $114,000, is for a new foundation (the same as in last estimate and shown on plans D and E), and a new draw.

It is possible that objection may be made to this foundation, on account of its forming a considerable obstruction to the flow of the tides, and thereby increasing the rapidity of the current in the channel way.

Respectfully submitted.

JOSEPH P. DAVIS,
City Engineer.

Estimate No. 1.

Approximate cost of repairing and strengthening Broadway Draw and foundation: —

New iron work and labor	$8,000 00
Replanking and painting	2,100 00
False works and special apparatus for lifting .	3,500 00
	$13,600 00
Add 15 per cent.	2,040 00
	$15,640 00
Say	$16,000 00

Estimate No. 2.

Approximate cost of building new foundation, as per plans B and C, and replacing old draw (after strengthening) with new centre-pivot turn-table: —

Curb	$1,750 00
Masonry	8,300 00
Excavation, services of diver, pumping, extra labor, false works, machinery, etc.	10,250 00
New caps to piles, iron bracing, etc.	3,800 00
Cost of new foundation	$24,100 00
Centre-pivot turn-table, new eccentrics	$10,000 00
Removing, strengthening, and replacing old draw	14,500 00
Replanking and painting	2,100 00
New engine-house and repairs to pier, etc.	3,200 00
	$53,900 00
Add 15 per cent.	8,085 00
	$61,985 00
Say	$62,000 00

Estimate No. 3.

Approximate cost of building new foundation, as per plans B and C, and replacing the old draw by a new one with centre-pivot turn-table: —

Cost of foundation, as per previous estimate	$24,100 00
Turn-table and eccentrics	10,000 00
Iron in new draw, in place	25,000 00
Flooring, sidewalk railing, painting, etc.	4,850 00
New engine-house, repairs to pier, etc.	3,200 00
	$67,150 00
Add 15 per cent	10,072 50
Total	$77,222 50
Say	$78,000 00

Estimate No. 4.

Approximate cost of building new foundation, as per plans D and E, and replacing old draw (after strengthening) with new centre-pivot turn-table: —

Curb	5,900 00
Masonry	35,000 00
Excavation, services of diver, pumping, extra labor, false works, machinery, etc.	13,300 00
Removing old piles, etc.	2,000 00
Cost of new foundation	56,200 00
Centre-pivot, turn-table, new eccentrics, etc.	10,000 00
Removing, strengthening and replacing old draw	14,500 00
Replanking and painting	2,100 00
New engine-house, repairs to pier, etc.	3,200 00
	86,000 00
Add 15 per cent.	$12,900 00
	$98,900 00
Say	$99,000 00

Estimate No. 5.

Approximate cost of building new foundation, as per plans D and E, and replacing the old draw by a new one with centre-pivot turn-table: —

Cost of foundation, as per estimate No. 4	$56,200 00
" new draw " " No. 3	39,850 00
Eugine-house, repairs to pier, etc.	3,200 00
	99,250 00
Add 15 per cent.	14,887 50
	$114,137 00
Say	$114,000 00

The material in the present draw, if sold for old iron, will bring about $4,000.

City Document.—No. 129.

CITY OF BOSTON.

REPORT

OF THE

COMMITTEE ON LEGISLATIVE MATTERS.

1873.

CITY OF BOSTON.

In Board of Aldermen, December 1, 1873.

The Committee on Legislative Matters, who were requested by an order passed November 18, 1873, to report in print the results of their transactions with the Legislature of 1873, in compliance with said order, beg leave to submit the following

REPORT.

At the first meeting of the committee a vote was passed authorizing the chairman and Councilman Perkins to appear in behalf of the committee before any and all legislative committees in support of the interests of the city, according to the authority conferred by the joint rule of the City Council. Not anticipating that a detailed report would be expected or called for, the chairman is unable at this late day to state the exact number of hearings thus attended in the city's behalf, further than that during the greater part of the session the average was about one a day. To advocate the measures for which His Honor the Mayor was instructed to petition, constituted but a small part of the labors of the committee. Other legislation affecting the city's interests was constantly being brought forward, necessitating a continual watch on all legislative proceedings, and a readiness for immediate action in defence of such interests whenever necessary.

The legislation petitioned for or advocated during the session in accordance with votes of the Council was as follows: —

THE ESTABLISHMENT OF AN INSANE HOSPITAL.

By vote of the City Council His Honor Mayor Gaston had petitioned the General Court for an allowance to the City of Boston of an amount of money equal to the sum assessed upon said city, for the support of insane paupers of other cities and towns, or for the establishment of a State hospital in the vicinity of Boston, for the support of the same class from that city. The inaugural address of the present Mayor strongly favored the latter alternative, and the portion relating to the subject was referred to this committee, who, by the chairman, advocated said petition before the Legislative Committee on Public Charitable Institutions, besides taking said committee to inspect the City Asylum at South Boston. Said committee subsequently reported, and the Legislature passed the bill which is now chap. 239 of the Acts of 1873, and entitled "An Act to establish a hospital for the insane in the north-eastern part of the Commonwealth."

REGISTRATION OF VOTERS.

His Honor Mayor Gaston, by direction of the last City Council, had petitioned the Legislature for the passage of an act to change the mode of preparing the voting lists, and of registering voters in this city, so that said duties may be transferred from the Board of Aldermen to competent registrars, to be performed within respective ward limits. This step was taken in view of the fact that with the city's growth, these labors had become too great even for the unremitting industry of the city clerk and his subordinates, and of the absolute necessity of soon providing other machinery therefor. At the same time certain citizens had petitioned for an act to regulate the conduct of elections in this city at the polls. These subjects being to a certain extent germane to each other, your committee were induced by the counsel for said petitioners, a member of the city government, to agree to the presentation of the desired measures in a single bill. The chairman was careful to confine his advocacy to the first sections only, concerning the registration of voters, being the measure petitioned for by the Mayor, and which he asked the committee to report separately in case the rest of the bill should fail. The bill was, however, reported as a whole, and encountered great opposition. The chairman made every effort to save that part which related to registration, but without avail; and various amendments eventually so changed its character, that its passage was no longer desired. It was finally defeated in the Senate.

REGIMENTAL AND BATTALION HEAD-QUARTERS.

In view of the fact that the city for some years had paid rent for such head-quarters, receiving no reimbursement therefor, your committee were instructed to urge such an amendment to the pending militia bill as should provide for a similar reimbursement of rent, for such head-quarters, as is provided for armories. The military committee declined to report the desired amendment, but at the request of the chairman of your committee it was offered in the lower branch and prevailed. See chap. 313, Acts of 1873, §§ 83, 84, 85, providing for a reimbursement of $300 for each regimental or battalion head-quarters.

RELIEF OF DISABLED FIREMEN.

In the month of March your committee were instructed to urge the passage of an act authorizing the City Council to expend $3,000 annually for this purpose, and for the families of those killed. This was successfully done, resulting in the passage of chap. 253 of the Acts of 1873.

PARKER HILL RESERVOIR.

In the month of March the Mayor was authorized to petition for authority for the city to take land, and build an additional reservoir at the summit of Parker Hill. The petition was presented, advocated, and resulted in the passage of the desired act, being chap. 287 of the Acts of 1873.

GRADE OF THE NORTHAMPTON-STREET DISTRICT.

In the month of February the Mayor was authorized to petition for a general act authorizing the City Council to compel the owners of lands below a certain grade, to raise the same for sanitary purposes, and, in case of failure or neglect, empowering the city to do so. This petition was advocated before the House Judiciary Committee by the chairman of this committee and the Assistant City Solicitor, and the desired act was reported. It was opposed in the lower branch, on the ground that its generality opened a door to abuse, and recommitted. The City Council then authorized the Mayor to petition that its provisions be restricted to the Northampton-street District, describing the same by metes and bounds. This removed the objection, and the act was passed, being chap. 340 of the Acts of 1873, entitled, "An Act to authorize the raising of the grade of certain lands in the City of Boston for the purpose of preserving the public health in said city."

PHYSICIANS' CERTIFICATES OF DEATHS.

A change in the law on this subject had been petitioned for, whereby the registrar should be required in all cases of the absence or neglect of an attendant physician to call in another to certify to the cause of death. This change was successfully advocated before the appropriate committee, but encountered opposition in the Senate, where it was finally rejected.

The following legislation was advocated at the instance of heads of departments: —

DANGEROUS BUILDINGS.

The loss of life at the fire on Hanover street, on the 27th of February, ascribable to a defectively built wall, and the absence of proper means of escape from the building, suggested the desirability of a revision of the then existing laws on this subject, and an extension of the powers and duties of the Inspector of Buildings. By desire of the head of that department, the legislation contained in sections 11 to 27 inclusive of the "building act" of 1873, chap. 298, was presented by the chairman, and successfully advocated before the appropriate committees. The most important changes from the previous law are contained in the sections authorizing immediate action by the Inspector where the public safety requires the same; authorizing the Supreme Court to arrest the erection of dangerous buildings by injunction; extending the provisions of the law to buildings dangerous to firemen or others in case of fire, and providing for an inspection of certain classes of buildings in relation to means of escape therefrom, with the enforcement of necessary changes therein.

THE BUILDING ACT.

The changes petitioned for in the building act passed at the special session were the subject of many hearings at the State House, as well as meetings of architects and others at the City Solicitor's Office. The city was represented by Assistant City Solicitor Stackpole, whose previous labors had given him acquaintance with the subject, and by the head of the Building Department. The result of said conferences was substantially the changes embodied in sections 1 to 11 of the act already cited.

WATERCOURSES FOR DRAINAGE.

The powers granted to various cities and towns to take and divert watercourses for drainage purposes had become, in view of recent increases in area, desirable to be obtained for this city, and at the request of the Superintendent of Sewers, a bill was drawn and presented, which is now chap. 205 of the Acts of 1873, entitled "An Act concerning sewers and drains in the City of Boston."

DEMOLITION OF BUILDINGS AT FIRES.

At the instance of the Chief Engineer, with the approval of His Honor the Mayor, a bill was drawn and advocated, conferring said power of demolition upon the engineer in command at a fire. See chap. 201, Acts of 1873, since accepted by the City Council.

DOMICILE AND TAXATION.

An attempt was made, at the instance of the head of the assessors' department, to obtain such a change in the law in relation to domicile for the purpose of taxation, as should prevent wealthy persons, who enjoy the advantages of a city residence during the greater part of each year, from leaving their share of the municipal burden incident thereto to be assessed upon their less fortunate fellow-citizens. This naturally met with great antagonism, not only from the class alluded to, but from the towns and villages benefited at the expense of the city by their action. Where the city millionnaire, the Nahant fisherman, and the village selectman made common cause in opposition, success could hardly be expected. The chairman and Assistant City Solicitor Stackpole argued the case in behalf of the city at several hearings, but the great legal ability employed on the other side convinced the Senate committee of the existence of constitutional objection to the change proposed, which, consequently, was reported against.

BERKELEY STREET.

One of the most important matters in which your committee was called upon to act, without special instructions, was that of the acceptance of Berkeley street. A number of citizens petitioned for such legislation as should enable the city to accept and lay out said street. As the interests of the city and of these petitioners were identical, the chairman, assisted by the City Solicitor, appeared at a series of hearings, and advocated such legislation as should enable the State to keep faith with the city by the conveyance of said streets to it in accordance with previously executed contracts. Against a most vigorous opposition before committees, in both branches and by the lobby, the desired act was passed under which the street has since been conveyed to the city, laid out and accepted. In this connection the committee will state that at one of said hearings objection was made by a member of the lower branch of the City Council to the chairman's assuming to appear "in behalf of the city," without special instructions in the case from the city government. The Judiciary Committee, however, overruled said objection on the ground that the authority given by the joint rule was general, "unless otherwise ordered," and not confined to cases of special instructions.

ANNEXATION.

When the important matter of annexation was under discussion, the chairman appeared before the Committee on Towns, and stated that he could take neither side in the controversy, but in behalf of the city suggested the desirability of delay until the report of the commission appointed by the city government should enable said government to decide upon its attitude in the matter. This course having been construed into an unauthorized opposition to the petition of the inhabitants of Brookline, the chairman asked for instructions authorizing him to state, if such was the fact, that the City Council did not desire to delay or oppose said petition. This order was rejected in the lower branch, and the matter dropped. The chairman subsequently presented to the same committee a memorial from his Honor the Mayor on the general subject of annexation. In advocating its views he was careful to state that they were those of his Honor alone, and represented no action by the City Council.

COMMISSION ON GRADE, DRAINAGE AND WATER SUPPLY.

A bill was introduced during the session, at the instance of the Hon. Wm. Gray, and with the approval of his Honor the Mayor, contemplating the appointment by the Governor of a commission of experts to examine the territory within a certain area about the city, and to report upon a comprehensive metropolitan system of grade drainage and water supply, the expenses of such commission to be equitably assessed upon the cities and towns benefited, and in proportion to the benefit received. With one exception the cities and towns embraced within the area aforesaid favored the bill, and some not originally included appeared by their selectmen petitioning for a share in its benefits. The exception alluded to was the city of Charlestown, by whose Mayor and City Solicitor the plan was vigorously opposed. The bill was unanimously reported by the legislative committee, and passed the House, but was defeated in the Senate. At various adjourned hearings, during a period of several weeks, this bill was advocated in behalf of the city by the chairman of this committee and the Assistant City Solicitor, as was duly reported in the daily papers. No instructions in the matter were suggested in the City Council, but the same objection to the chairman's authority to appear was again taken, as in the case of Berkeley street, and again overruled by the committee.

Legislation regarded as adverse to the city's interests was from time to time opposed with varied success. The petition of the town of Natick to be allowed to take water from Dug Pond was considered as an infringement on the rights granted to the city, and was ably, but unsuccessfully, opposed by the Assistant City Solicitor. It was advocated before the committee, by a senator from that town. Orders were offered, by a member of the lower branch of the Legislature, contemplating changes in the city charter, by making the Committees on Sewers and Paving, joint committees of both branches of the City Council. Your committee being unanimous in the opinion that such change was undesirable, the chairman successfully opposed the same before the House Judiciary Committee, who reported inexpedient in both cases.

A bill was reported from the Senate Judiciary Committee, after a hearing of which the city was not notified, which proposed in substance to empower the Supreme Court to revive barred claims against the city under the Suffolk-street act. This appearing to the committee on that district as illegal and mischievous, a vote was passed requesting this committee to oppose the same, which was successfully done before the House Judiciary Committee, by the chairman and the Assistant City Solicitor.

Incidentally to the petition of a horse railway corporation for an extension of its route, and leave to use the tracks of another, your committee advocated a general law, giving jurisdiction in such matters to the local authorities of the cities or towns wherein such tracks or proposed routes lay. This proposition was defeated, as might have been expected, in view of the interests opposing the same.

The foregoing are believed to comprise all the matters of importance upon which your committee were called upon to act during the last session of the Legislature. Had your committee had reason to anticipate the present call for a report, they would have been enabled to present one in more comprehensive form. The fact that a report from this committee was last year for the first time made, did not lead your committee to infer that it would be for the future expected or required. This fact and the lateness of the period at which the call was made must account for the absence of matters of detail.

For the committee,

SAMUEL M. QUINCY,
Chairman.

City Document.—No. 130.

CITY OF BOSTON.

MAYOR'S MESSAGE

IN RELATION TO

RELIEF OF POOR OF THE CITY.

1873.

IN COMMON COUNCIL, November 25, 1873.

Laid on the table and ordered to be printed.

Attest:

W. P. GREGG, *Clerk of the Common Council.*

CITY OF BOSTON.

EXECUTIVE DEPARTMENT.
CITY HALL, BOSTON, Nov. 24, 1873.

To the Honorable the City Council: —

GENTLEMEN, — I have the honor to transmit herewith a communication from the Board of Overseers of the Poor in reply to certain inquiries, which I made on the 18th instant, in relation to the relief of the poor in this city during the coming winter.

Since the opinion of the Board was asked upon the expediency of distributing soup from the Police Stations, I have conferred with the City Solicitor upon the subject, and have been informed by him that the City Council has no authority to appropriate money for such a purpose.

It is proper that I should state that the inquiries were made and the opinion of the Solicitor obtained, before any action had been taken by your honorable body; otherwise I should not presume to communicate with you upon the subject at this time.

HENRY L. PIERCE,
Mayor.

IN BOARD OF ALDERMEN, Nov. 24, 1873.

Referred to the Committee on Overseers of the Poor, with instructions to consider the expediency of the establishment, by the Overseers of the Poor, of proper places throughout the city for furnishing soup or other provisions to the poor of this city. Sent down for concurrence.

L. R. CUTTER,
Chairman.

[COPY.]

Executive Department.
City Hall, Boston, Nov. 18, 1873.

Hon. F. W. Lincoln, *President Board of Overseers of the Poor:* —

Dear Sir, — In view of the distress which is likely to be produced among the laboring classes during the coming winter, caused by the recent financial disturbances in other sections of the country, I desire to obtain the opinion of the Board of Overseers as to the propriety of taking any official action at this time to meet the extraordinary demands which may be made upon the city for temporary aid. If any assistance is desired in obtaining information in regard to the number of persons, dependent upon their daily earnings, who are likely to be thrown out of employment in consequence of this unexpected interruption of business, the Chief of Police will cheerfully furnish it.

I am aware that it is an extremely difficult and delicate matter for the government to depart from established methods in providing relief for the destitute, without increasing the very evil which it is endeavoring to cure. In times of general distress, however, a rigid adherence to the somewhat severe requirements of the laws relating to settlements might work a hardship to the deserving poor. Better that some unworthy persons should be aided than that one worthy person should be allowed to suffer. I have no doubt that the members of your Board, most of whom have had a long experience in this charitable work, will be able to devise a system which, while meeting the demands of the times, will be free from the evil consequences which would result from a careless, or indiscriminate use of the public funds for the benefit of any person who claims to be in distress.

It is with a view to avoid hasty action by and by on the part of the government, that I apply to you to make an examination of this matter in advance of the actual demands upon us for extra assistance, so that if any enlargement of the present channels of relief is needed, it may be made with a due regard to the public welfare. In this connection I should be pleased to have the opinion of the Board upon the expediency of continuing the practice, which has been pursued for several years past, of furnishing soup from the Police Stations to a certain class of poor persons. I have not satisfied myself that the City Council has authority to appropriate money for such a purpose, but I desire your opinion on the supposition that the government has the authority.

I am, with great respect,

HENRY L. PIERCE,
Mayor.

Office of the Overseers of the Poor,
Charity Building, Cor. of Hawkins and Chardon Sts.
Boston, Nov. 22, 1873.

To His Honor, Henry L. Pierce, *Mayor of Boston:* —

Dear Sir, — At a special meeting of the Overseers of the Poor held this day, your communication of the 18th inst., in regard to the relief of the poor the present winter, was laid before them. They gratefully acknowledge that concern for this class of our people which prompted you to address us on the subject, as well as that regard to those interests of a public character evinced by your solicitude that any measure adopted should be timely and judicious in its nature.

The results of the deliberations of the Board are embodied in two resolutions in answer to the two objects of inquiry submitted to our consideration. In transmitting them to you, I was authorized to make such further comments upon the general subject as might occur to my own mind as to the experience of myself, or that of my associates, in the special work delegated to us by the City Council.

The mere distribution of charity, especially if the means are not furnished from our own pockets, seems to be a simple affair; but when it is considered that the method of its administration is pregnant for weal or woe to the community of which we form a part, it becomes a more serious matter and cannot be hastily discussed in a few words necessarily limited by the nature of this communication. The moment that any individual receives aid at the public charge, that moment that individual's relation to society is changed, and when by the aggregation of numbers those individuals become a large class, they become an important element in the social state, and any event which has a tendency to their increase is to be deprecated. The great fire of November of the last year is to be deplored for the large amount of property destroyed, and the numbers thrown suddenly out of employment; but not the least of its evils was the opportunity furnished to many persons, for the first time, to appeal to the public for assistance. They were justified under the circumstances, and even invited to make such a claim, and generous means were placed by our citizens to respond to such calls; but as another winter is approaching, we are already observing the indications that a portion of the same number are again at the doors of our charitable institutions begging for support. The recent financial panic, coming at a similar period of the year, again awakens apprehension, and its effects should be met, not only with a benevolent spirit, but in a manner which, while gently relieving the necessities of the real sufferers, will not encourage the importunities of the thriftless and improvident.

The functions of the Board of Overseers of the Poor, as you are aware, are regulated by the statute laws of the Commonwealth, and to the extent of their violation by our officers we are recreant to our duties and oaths of office. In some particulars we wish those laws could be amended; but living as we do in a city abounding in charitable organizations, whose treasuries are furnished by the more affluent of our citizens, the cases we cannot legally relieve are succored by them, so that no needy individual of any class has occasion to suffer when his wants are properly made known. We have no doubt that the calls upon these societies will be unusually urgent the present season, and we trust that those generous benefactors, who are in the habit of making them the almoners of their bounty, will respond to their appeals, so that they will be supplied with all the funds which may be necessary.

The second object of your inquiry, the opinion of the Board as to the expediency of continuing the policy of distributing soup from the Police Stations, was considered, and a resolution adopted disapproving of the measure.

While the first resolution was passed with unanimous consent, it is but fair that I should inform you that two gentlemen of the Board dissented from the opinion of their associates, and voted against this resolution. While these gentlemen agreed with nearly all who have had experience in charitable work, that, as a permanent policy, the distribution of soup in this manner is inexpedient, yet they felt that the exigencies of the coming winter may be of such a character as will justify its continuance for another year.

Boston has a deservedly high reputation outside of its own limits for its benevolent spirit. It has attained this, not by a prodigal and lavish expenditure of large appropriations, doling out its alms in a lax and loose manner, but by the establishment of a method and system which, while relieving real want, represses mendicity. The establishment of soup-houses, or turning the Police Stations into them, a few years since, was regarded by nearly all conversant with the subject as a doubtful expedient for relieving the poor; the objections are obvious, and need not be commented on at this time.

Employment for the able-bodied is better charity than alms-giving; and, although it is not the province of municipalities to furnish it for the people, yet incidentally some enterprises of a public nature might be prosecuted, even out of season, to be supplemented by men of capital engaging in new ventures to their own profit, as well as for the benefit of the laboring classes.

It is the opinion of some of our most sagacious business men that we have already passed the period of our most severe commercial depression, and that the prospects are brightening for a return to our usual prosperity. If this hope is fallacious, and will not be speedily realized, I can assure you that our Board will endeavor to meet, to the best of their abilitty, the new emergencies as they arise, and we have no doubt that the same spirit will animate the more private charitable organizations not under municipal control.

There are occasionally cases, from their peculiar circumstances unknown to our visitors, coming to the knowledge of the police of which we should be promptly notified at our office. There are other cases of extreme destitution, in the outskirts of the city, which require immediate and temporary relief, for which arrangements have recently been made with the Chief in concurrence with our Board.

I remain, dear sir,

Yours very truly,

F. W. LINCOLN,

Chairman.

OFFICE OF THE OVERSEERS OF THE POOR,
CHARITY BUILDING, COR. OF HAWKINS AND CHARDON STS.
BOSTON, Nov. 22, 1873.

At a special meeting of the Overseers of the Poor held at their office Saturday, Nov. 22, 1873, a communication from His Honor the Mayor was laid before them, and after a full consideration of the same the following resolutions were adopted: —

Resolved, That, as at present advised, there is no unusual exigency existing, growing out of the commercial panic, to require any new organization or channel for the relief of the destitute the coming winter. The city is well covered by the Overseers of the Poor, and the existing charitable organizations, for ministering to the necessities of the needy. While there is some apprehension that, owing to the stagnation in business and industrial pursuits, the calls may be more numerous than in former years, yet the present organizations can accomplish the work if the means are placed at their disposal for this purpose. If the appropriation voted by the City Council to be expended legally by this Board should become exhausted, the knowledge of the fact will be communicated, and another appropriation will be called for at the proper time, while an appeal to the more affluent and benevolent of our citizens, we have no doubt, will meet with a hearty response, if the funds of the more private charitable associations should become depleted from the same cause. The knowledge of a large fund to be devoted to charitable objects will, we fear, exert a demoralizing influence upon the community; it will cause a large influx of the improvident of other places to make this city their residence the coming winter, and encourage the same class among ourselves to be less frugal with their means, and less reliant upon their own resources, looking, as they naturally would, to the public for support. There is a large class of the really unfortunate, become destitute by sickness or the want of employment, who claim our sympathy, and whose wants will be relieved with that consideration and tenderness which their merits deserve; but there is another class of the idle and dissolute in our large city, who take advantage of every source of supply, whose demands should be ignored and utterly rejected.

While it is the duty of every individual, so far as his heart prompts, and his pecuniary means will justify, to relieve the necessities of those thrown more immediately about him, and with whose circumstances he is personally acquainted, — and this number may be increased in every circle the approaching season, — yet we cannot but believe that after these cases are met, there will be abundance of means at the disposal of the more public channels of charity for the relief of those who have no friends to whom to appeal, and whose necessities must be met by other than private sources.

Entertaining these views the Board are of the opinion that, at this time, no official action is required of the City Government to meet present or future wants.

Resolved, That the practice of distributing soup from the Police Stations, in the opinion of this Board, is unwise and injudicious, tending to aggravate and increase the evil it designs to alleviate.

A true copy.

Attest: JOHN PRATT,
Secretary.

City Document. — *No.* 131.

CITY OF BOSTON.

REQUEST

OF THE

COMMITTEE ON PUBLIC BUILDINGS

FOR

An Additional Appropriation.

In Board of Aldermen, Dec. 1, 1873.

Referred to the Committee on Finance. Sent down for concurrence.

L. R. CUTTER, *Chairman.*

CITY OF BOSTON.

IN BOARD OF ALDERMEN, December 1, 1873.

The Joint Standing Committee on Public Buildings beg leave to report, that, in consequence of the extraordinary expenses created by order of the City Council during the present year, the appropriation for Public Buildings for the financial year 1873–74 has been nearly exhausted.

Following is the cost of the work performed by order of the City Council, and charged to the appropriation for Public Buildings; none of the said work being anticipated at the time the appropriation was made, in February, 1873: —

For the purchase of two buildings in Washington square, for the accommodation of an engine and hook-and-ladder carriage, including the fitting up of the same for the men and horses	$3,334 47
For the erection of an engine house on Parker street, on land leased for that purpose .	3,034 25
For altering and enlarging Hose House No. 4, to accommodate an engine and horse-hose carriage, together with the men and horses connected therewith	9,314 74
For the high-service supply for City Hall, including the stand-pipe, hose, and fixtures, in connection with Tobey's patent, as a preventative against fire	4,036 98
Carried forward, ...	$19,720 44

Brought forward,	$19,720 44
For iron shutters for the City Hall, strengthening the Treasury vaults, and providing a fire-proof room in the same, for the preservation of plans and public documents	4,310 76
For iron shutters and Hyatt lights for the Public Library Building, and other protection against fire	7,500 00
In addition to the foregoing the following amounts have been spent by the Committee on Public Buildings: —	
For alterations and new ventilation for the City Prison	1,146 00
For excavating the cellar of Engine House No. 10, and protecting the same against tide water	2,727 98
Total	$35,405 18

The appropriation for Public Buildings for the financial year 1873–74 was $92,000.00.

Following are the various expenditures of the appropriation, classified, with the amounts for the eight months of the financial year: —

Masonry	$7,195 21
Carpentry	9,604 12
Painting and glazing	5,064 57
Gas-fitting and plumbing	3,439 80
Whitewashing and plastering	2,903 75
Furniture	6,370 11
Roofing	1,707 01
Iron work	3,151 59
Carried forward,	$39,436 16

Brought forward,	$39,436 16
Locksmith	127 30
Gas and water.	2,256 06
Rents	2,128 12
Cleaning	2,458 14
Fuel	759 25
Salaries	4,700 00
Supplies, horse-keeping and expense of committee	2,757 43
Grading and watering	1,003 75
	$55,626 21

RECAPITULATION.

Extraordinary expenses	$35,405 18
Ordinary repairs and expenses	55,626 21
Total	$91,031 39

It will be seen that out of an appropriation of $92,000.00, the sum of $91,031.39 has been expended.

The committee are of the opinion that the sum of $25,000.00 will be required for Public Buildings for the remaining four months of the financial year, and would respectfully ask for an appropriation of that amount.

For the committee,

WM. SAYWARD,
Chairman.

City Document. — *No.* 132.

CITY OF BOSTON.

AUDITOR'S MONTHLY EXHIBIT.

DECEMBER 3, 1873.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1873-74.

MONTHLY EXHIBIT.

Office of the Auditor of Accounts,
City Hall, December 3, 1873.

To the Honorable City Council:

Gentlemen, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1873–74, as shown in the books in his office, December 1, 1873, including the December draft, being eight months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

Object of Appropriations.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Advertising	$6,000 00	$2,421 58	$3,578 42
Annuities	512 00	245 00	267 00
Armories	22,000 00	10,919 67	11,080 33
Board of Health	86,274 00	51,659 52	34,614 48
Boston Harbor	10,000 00	2,670 41	7,329 59
Bridges	*32,000 00	24,934 07	7,065 93
Cedar Grove Cemetery . . Add Revenue rec'd, $10,968 16	3,000 00	13,911 56	56 60
Cemeteries	15,700 00	9,238 61	6,461 39
Charles River and Warren Bridges	7,000 00	3,636 07	3,363 93
Chestnut Hill Driveway . . .	5,000 00	5,000 00	. . . . .
City Hospital	110,000 00	77,381 35	32,618 65
Common, Public Squares, etc. .	80,000 00	83,563 27	$3,563.27 to be prov'd for.
Contingent Funds, viz.:			
Joint Com'i'tees of the City Council	4,000 00	1,258 17	2,741 83
Mayor	1,500 00	35 00	1,465 00
Board of Aldermen . . .	1,500 00	1,131 70	368 30
Common Council . . .	3,000 00	1,915 95	1,084 05
County of Suffolk	325,000 00	183,704 99	141,295 01
East Boston Ferries . . .	290,000 00	248,572 30	41,427 70
Engineer's Department . . .	24,000 00	15,229 38	8,770 62
Fire Alarms and Bells and Clocks .	50,940 00	37.008 01	13,931 99
Fire Department	551,316 00	421,755 40	129,560 60
Grammar School House, L street .	¶†48,838 55	48,783 44	55 11
Health Department	383,550 00	256,835 26	126,714 74
Incidental Expenses	87,000 00	27,441 10	59,558 90
Inspection of Buildings . . .	16,800 00	13,724 47	3,075 53
Interest and Premium . . .	1,695,000 00	880,576 92	814,423 08
Lamps	390,000 00	224,987 46	165,012 54
Markets	**15,500 00	11,903 82	3,596 18
Militia Bounty	45,000 00	5,165 00	39,835 00
Mount Hope Cemetery . . Add Revenue rec'd, $20,558 90	15,000 00	34,081 67	1,477 23
Overseers of the Poor . . .	73,400 00	38,962 39	34,437 61
Old Claims	1,500 00	442 70	1,057 30
Paving, etc.	1,000,000 00	754,549 44	245,450 56
Police	700,000 00	446,771 25	253,228 75
Printing and Stationery . . .	35,000 00	26,546 66	8,453 34
Public Baths	40,000 00	31,630 36	8,369 64
Public Buildings	92,000 00	91,031 76	968 24
Public Institutions, viz.:			
House of Industry . . .	180,000 00	134,746 10	45,253 90
House of Correction . . .	90,500 00	80,790 13	9,709 87
Lunatic Hospital . . .	60,000 00	39,138 37	20,861 63
Pauper Expenses . . .	31,500 00	16,005 16	15,494 84
Steamboat "Henry Morrison" .	16,000 00	12,017 65	3,982 35
Office Expenses	8,000 00	4,887 64	3,112 36
Public Lands	6,000 00	2,314 91	3,685 09
Public Library	‡115,197 28	103,487 19	11,710 09
Quarantine Department . . .	19,250 00	15,799 11	3,450 89
Registration of Voters and Election Expenses	20,000 00	2,772 87	17,227 13
Carried forward . . .	$6,813,777 83	$4,501,584 84	$2,347,283 32

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* $4,000 of this amount brought from last year.
† $26,338 55 of this amount brought from last year.
‡ $25,197 28 of this amount brought from last year.
¶ $7,500 transferred from Reserved Fund.
** $5,500 transferred from Reserved Fund.

Object of Appropriations.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Brought forward . . .	$6,813,777 83	$4,501,584 84	$2,347,283 32
Reserved Fund	*257,000 00	90,600 00	166,400 00
Salaries	166,000 00	121,400 43	44,599 57
Schools and School-houses, viz.:			
School Instructors . . .	1,024,875 00	633,235 13	391,639 87
School expenses, School Committee	86,750 00	80,386 92	6,363 08
Salaries officers, School Committee	24,500 00	16,338 17	8,161 83
School-houses, Public Buildings	255,000 00	181,167 04	73,832 96
Sealers of Weights and Measures .	7,000 00	4,500 56	2,499 44
Sewers	230,000 00	205,153 67	24,846 33
Sinking Fund Commissioners .	2,800 00	1,350 00	1,450 00
State Tax	736,480 00	. . . . .	736,480 00
Surveyor's Department . . .	40,000 00	25,370 86	14,629 14
Water Works	336,500 00	320,443 96	16,056 04
Water Works, Interest and Premium	653,000 00	74,559 99	578,440 01
West Boston and Cragie's Bridges	¶88,832 23	6,102 01	82,730 22
Widening Streets	300,000 00	193,693 91	106,306 09
		$6,455,887 49	$4,601,717 90
Total Appropriations, $10,932,147 00		Less to be provided for	3,563 27
Balances from 1872–3, 90,368 06			
	$11,022,515 06		$4,598,154 63
Add Revenue,	31,527 06		
	$11,054,042 12		

* $7,500 transferred to Grammar School House, L street.
* $5,500 transferred to Markets.
* $30,000 transferred to Sewers.
¶ $34,832 23 of this amount brought from last year.

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General . . .	$11,054,042 12	$6,455,887 49	$4,598,154 63
Special . . .	9,297,060 86	4,835,101 89	4,461,958 97
	$20,351,102,98	$11,290,989 38	$9,060,113 60

SPECIAL APPROPRIATIONS.

[*Under this head, the appropriations are the balances brought from the last financial year, and appropriations made the present financial year.*]

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Addition to Engine House No. 16, (reserved fund)	$18,000 00	$11,747 84	$6,252 16
Additional Supply of Water (transfer and loans)	546,418 36	36,477 04	509,941 32
Appleton Street Extension (loan)	2,938 10	......	2,938 10
Atlantic Avenue (loans)	203,516 22	72,022 04	131,494 18
Broadway Extension (loans)	80,680 21	......	80,680 21
Burnt District (loans)	3,943,692 93	2,417,530 00	1,526,162 93
Canton Street Grading (loan)	33,225 20	......	33,225 20
Chelsea Street Bridge (loan)	23,000 00	17,094 52	5,905 48
Church Street District (loans)	21,415 32	21,587 48	$172.16 to be prov'd for.
Coal Sheds, Deer Island (appropriation)	15,000 00	14,991 13	8 87
Columbus Avenue Extension (loans)	362,750 00	325,011 50	37,738 50
Devonshire Street Extension (loan)	113,544 00	81,529 26	32,014 74
Engine and Hook and Ladder House Ward 5 (loans)	65,000 00	23,933 66	41,066 34
Engine House, Mason Street (transfer)	15,000 00	......	15,000 00
Engine House No. 12 (loans and transfer)	23,187 51	22,463 33	724 18
Engine House, Ward 14 (transfers and loan)	25,898 95	24,718 74	1,180 21
Fort Hill Improvement (loans)	116,417 77	8,440 55	107,977 22
Fort Hill Wharf (loan)	110,000 00	110,000 00	......
Grading Madison Square (transfers)	3,015 96	3,015 96	......
Grammar School House, Atherton District (loan)	22,861 10	22,798 95	62 15
Grammar School House, Dudley District (loan)	110,000 00	50,612 85	59,387 15
Grammar School House Ward 15 (loan)	105,000 00	35,325 80	69,674 20
Harrison Avenue Extension (loan)	58,970 91	12,860 44	46,110 47
Highland Street Stable (loan)	85,000 00	23,400 38	61,599 62
Home for Poor, Deer Island (transfer)	225,000 00	......	225,000 00
Hook and Ladder House No. 4, (reserved fund)	33,000 00	15,472 12	17,527 88
Hose House, Longwood (loan)	28,000 00	5,834 78	22,165 22
Hose House, South Boston (transfer)	7,182 11	7,146 28	35 83
Mather School House, Ward 16 (loan)	46,784 16	46,356 49	427 67
Memorial Monument, Boston Common (transfer)	75,000 00	......	75,000 00
New Lunatic Hospital (loan and appropriation)	103,655 62	611 58	103,044 04
Northampton Street District	......	12 00	$12 adv. by Treas'r.
Parker Hill Reservoir (loan)	161,000 00	9,445 30	151,554 70
Police Station House No. 11 (transfer)	7,500 00	7,500 00	......
Police Station House, South Boston (loan)	45,000 00	15,308 28	29,691 72
Primary School Houses, East Boston	80,000 00	39,684 44	40,315 56
Primary School House Lot, Ward 14 (reserved fund)	10,000 00	9,383 50	616 50
Primary School House, Newbury Street (loan)	40,000 00	......	40,000 00
Primary School House, Ward 9 (loan)	60,000 00	59,080 00	920 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	......	10,000 00
Small-pox Hospital (loan)	37,512 46	1,524 50	35,987 96
Soldiers' Relief (revenue)	151,115 48	47,120 26	103,995 22
South Market Street Extension (loan and transfer)	31,915 53	30,955 59	959 94
Station House, District No. 11 (loan)	40,000 00	......	40,000 00
Suffolk Street District (loans)	326,933 79	309,440 93	17,492 86
Ticknor Bequest (transfer)	2,060 51	......	2.060 51
Washington Street Extension (loan)	1,025,328 00	600,650 00	424,678 00
Water Street Grade Damages (transfer)	15,546 17	......	15,546 17
Water Works Wards 13, 14, 15 and 16 (loan)	115,000 00	114,998 51	1 49
Widening and Grading Dudley and other Streets (loan)	10,823 50	3,558 30	7,265 20
Widening Eliot Street (loan and transfer)	13,458 99	......	13.458 99
Widening Federal Street (loans)	1,103 03	......	1,103 03
Widening Federal Street Bridge (loan and transfer)	9,287 76	9,220 00	67 76
Widening Hanover Street (loans)	41,127 92	......	41,127 92
Widening Hanover Street, No. 2 (loans)	62,146 81	11,200 00	50,946 81
Widening Kingston Street (loan)	59,535 81	......	59,535 81
Widening Kneeland Street (loan)	4,564 67	77 48	4,487 19
Widening Warren Street (loan)	62,934 00	22,381 82	40,552 18
Widening Washington and Essex Streets (loan)	250,000 00	132,578 26	117,421 74
	$9,297,048 86	$4,835,101 89	$4,462,131 13
Advanced by Treasurer	12 00	Less to be provided for	172 16
	$9,297,060 86		$4,461,958 97

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1873.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the December draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans)	$610,000 00	$100,058 68	$509,941 32
Appleton Street Extension (loan)	100,000 00	97,061 90	2,938 10
Atlantic Avenue (loans) . .	1,600,000 00	1,468,505 82	131,494 18
Broadway Extension (loans) .	1,000,000 00	919,319 79	80,680 21
Burnt District (loan) . . .	5,051,176 65	3,525,013 72	1,526,162 93
Canton Street Grading (loan) .	150,000 00	116,774 80	33,225 20
Church Street District (loans) .	1,175,000 00	1,175,172 16	($172.16 to be provided for.)
Columbus Avenue Extension (l'ns)	515,000 00	477,261 50	37,738 50
Devonshire Street Extension (loan)	510,000 00	477,985 26	32,014 74
Engine House No. 12 (loans & tr'n.)	34,500 00	33,775 82	724 18
Engine House W'd 14 (tran. & l'n)	33,000 00	31,819 79	1,180 21
Fort Hill Improvement (loans) .	1,575,000 00	1,467,022 78	107,977 22
Grading Madison Square (transfers)	12,158 49	12,158 49	. . . .
Grammar School House Atherton District (loan)	50,000 00	49,937 85	62 15
Grammar School House L Street (loan and appropriation) . .	112,500 00	112,444 89	55 11
Harrison Avenue Extension (loan)	220,000 00	173,889 53	46,110 47
Hose House, So. Boston (transfer)	23,000 00	22,964 17	35 83
Mather School House, W'd. 16 (loan)	65,000 00	64,572 33	427 67
New Lunatic Hospital (loan and appropriation)	148,000 00	44,955 96	103,044 04
Oliver Street	187,114 05	352,895 17	($165,781.12 advanced by Treasurer.)
South Market Street Extension (loan and transfer)	333,000 00	332,040 06	959 94
Suffolk Street District (loans) .	2,381,248 96	2,363,756 10	17,492 86
Washington St. Extension (loan)	1,500,000 00	1,075,322 00	424,678 00
Water Street Grade Damages (tr'n)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley and other Streets (loans) . .	180,000 00	172,734 80	7,265 20
Widening Eliot Street (l'n and tr'n)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Federal St. Bridge (loan and transfer)	90,584 25	90,516 49	67 76
Widening Hanover Street (loans)	725,000 00	683,872 08	41,127 92
Widening Hanover St., No. 2 (l'ns)	820,000 00	769,053 19	50,946 81
Widening Kingston Street (loan)	225,000 00	165,464 19	59,535 81
Widening Kneeland Street (loan)	150,000 00	145,512 81	4,487 19
Widening Warren Street (loan)	115,000 00	74,447 82	40,552 18
	$20,506,282 40	$17,381,201 76	$3,291,033 92
Advanced by Treasurer . .	165,781 12	Less to be provided for	172 16
	$20,672,063 52		$3,290,861 76

City Document.—No. 133.

CITY OF BOSTON.

WIDENING

OF

PEARL STREET.

1873.

CITY OF BOSTON.

In Board of Street Commissioners,
December 15, 1873.

Resolved, That the safety and convenience of the inhabitants of the city require that Pearl street should be widened near Milk street, and for that purpose it is necessary to take and lay out as a public street or way of the said City, a parcel of land belonging to The Mutual Life Insurance Company of New York, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, one hundred eighty-two and $\frac{72}{100}$ feet; northwestwardly by Milk street, ten and $\frac{83}{100}$ feet; northeastwardly by the present line of Pearl street, one hundred seventy-eight and $\frac{54}{100}$ feet; and southeastwardly by land hereinafter described as taken from James Leeds, ten feet; containing eighteen hundred and six square feet, more or less.

A parcel of land belonging to James Leeds, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, forty-two feet, northwestwardly by land before described as taken from the Mutual Life Insurance Company of New York, and by the present line of Pearl street, ten and $\frac{42}{100}$ feet; northeastwardly by said present line of Pearl street, forty-two feet; and southeastwardly by land hereinafter described as taken from Thomas Minns and sisters, and by said present line of Pearl street, ten and $\frac{50}{100}$ feet; containing four hundred and thirty-nine square feet, more or less.

A parcel of land belonging to Thomas Minns and sisters, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, one foot and $\frac{22}{100}$ of a foot; northwestwardly by the same, two and $\frac{6}{100}$ feet; again southwestwardly by the same, twelve and $\frac{26}{100}$ feet; southeastwardly by the same, two and $\frac{6}{100}$ feet; southwestwardly again by the same, seven and $\frac{52}{100}$ feet; northwestwardly again by land before described as taken from James Leeds, ten feet; northeastwardly by the present line of Pearl street, twenty-one feet; and again southeastwardly by land hereinafter described as taken from Susan C. Wheelwright, ten feet; containing one hundred and eighty-five square feet, more or less.

A parcel of land belonging to Susan C. Wheelwright, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, one foot and $\frac{23}{100}$ of a foot; northwestwardly by the same, three and $\frac{18}{100}$ feet; again southwestwardly by the same, twelve and $\frac{27}{100}$ feet; southeastwardly by the same, three and $\frac{18}{100}$ feet; southwestwardly again by the same, seven and $\frac{50}{100}$ feet; again northwestwardly by land before described as taken from Thomas Minns and sisters, ten feet; northeastwardly by the present line of Pearl street, twenty-one feet: and again southeastwardly by land hereinafter described as taken from the heirs of Zabdiel B. Adams, ten feet; containing one hundred and seventy-one square feet, more or less.

A parcel of land belonging to the Heirs of Zabdiel B. Adams, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, twenty and $\frac{50}{100}$ feet; northwestwardly by land before described as taken from Susan C. Wheelwright, and by the present line of Pearl street, ten and $\frac{50}{100}$ feet; northeastwardly by said present line of Pearl street, twenty and $\frac{50}{100}$ feet; and southeastwardly by land hereinafter described as taken from Caleb

Stetson, ten and $\frac{50}{100}$ feet; containing two hundred and fifteen square feet, more or less.

A parcel of land belonging to CALEB STETSON, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, twenty-one and $\frac{25}{100}$ feet; northwestwardly by land before described as taken from the heirs of Zabdiel B. Adams, ten and $\frac{50}{100}$ feet; northeastwardly by the present line of Pearl street, twenty-one and $\frac{25}{100}$ feet; and southeastwardly by land hereinafter described as taken from Samuel and William Atherton, ten and $\frac{50}{100}$ feet; containing two hundred and twenty-three square feet, more or less.

A parcel of land belonging to SAMUEL AND WILLIAM ATHERTON, bounded as follows, viz.: southwestwardly by the line of widening of Pearl street, twenty-nine and $\frac{89}{100}$ feet; northwestwardly by land before described as taken from Caleb Stetson, ten and $\frac{50}{100}$ feet; northeastwardly by the present line of Pearl street, twenty-nine and $\frac{73}{100}$ feet; and southeastwardly by Franklin street, ten and $\frac{50}{100}$ feet; containing three hundred and thirteen square feet, more or less.

A parcel of land belonging to the HEIRS OF EDWARD CRUFT, bounded as follows, viz.: northeastwardly by the line of widening of Pearl street, one hundred nineteen and $\frac{54}{100}$ feet; northwestwardly by land formerly taken from S. S. Perkins, to widen Pearl street, and by the present line of Pearl street, two and $\frac{40}{100}$ feet; southwestwardly by said present line of Pearl street, one hundred nineteen and $\frac{54}{100}$ feet; and southeastwardly by said present line of Pearl street, and by land hereinafter described as taken from James Parker, two and $\frac{40}{100}$ feet; containing two hundred and eighty-seven square feet, more or less.

A parcel of land belonging to JAMES PARKER, bounded as follows, viz.: northeastwardly by the line of widening of Pearl street, sixty-one and $\frac{75}{100}$ feet; northwestwardly by land before described as taken from the heirs of Edward

Cruft, two feet; southwestwardly by the present line of Pearl street, sixty-one and $\frac{65}{100}$ feet; and southeastwardly by Franklin street, two feet; containing one hundred and twenty-three square feet, more or less.

A parcel of land belonging to the Heirs of J. M. Smith, bounded as follows, viz.: northeastwardly by the line of widening of Pearl street, twenty-eight feet; northwestwardly by Franklin street, one foot and $\frac{75}{100}$ of a foot; southwestwardly by the present line of Pearl street, twenty-eight feet; and southeastwardly by land now or formerly of the heirs of W. H. Bordman two feet; containing fifty-two and one-half square feet, more or less.

And Whereas due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, It is Therefore Ordered, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, according to a plan of the said widening made by Thos. W. Davis, City Surveyor, dated September 16, 1873, and deposited in his office. And this Board doth adjudge that the expense of widening the said Pearl street, as aforesaid, will amount to sixty-six thousand four hundred and forty dollars; and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

Estimate of Damages Occasioned by the Widening of Pearl street, 1873.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before widening.	Value of buildings after widening.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.
Mutual Life Insurance Co., of New York	. . . . . .	1,806	$21 00	$37,926 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	$37,926 00
James Leeds	. . . . . .	439	14 25	6,255 75	. . . . . .	. . . . . .	. . . . . .	. . . . . .	6,255 75
Thomas Minns and sisters	. . . . . .	185	14 25	2,636 25	. . . . . .	. . . . . .	. . . . . .	. . . . . .	2,636 25
Susan C. Wheelwright	. . . . . .	171	14 25	2,436 75	. . . . . .	. . . . . .	. . . . . .	. . . . . .	2,436 75
Heirs of Zabdiel B. Adams	. . . . . .	215	14 25	3,063 75	. . . . . .	. . . . . .	. . . . . .	. . . . . .	3,063 75
Caleb Stetson	. . . . . .	223	14 25	3,177 75	. . . . . .	. . . . . .	. . . . . .	. . . . . .	3,177 75
Sam'l and Wm. Atherton	. . . . . .	313	18 50	5,790 50	. . . . . .	. . . . . .	. . . . . .	. . . . . .	5,790 50
Heirs of Edward Cruft	. . . . . .	287	9 00	2,583 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	2,583 00
James Parker	. . . . . .	123	13 00	1,599 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	1,599 00
Heirs of J. M. Smith	. . . . . .	52½	18 50	971 25	. . . . . .	. . . . . .	. . . . . .	. . . . . .	971 25
	. . . . . .	3,814½	. . . . . .	$66,440 00	. . . . . .	. . . . . .	. . . . . .	. . . . . .	$66,440 00

City Document. — *No.* 134.

CITY OF BOSTON.

REPORT

OF THE

COCHITUATE WATER BOARD,

IN REPLY TO AN

ORDER OF THE CITY COUNCIL (PASSED OCT. 31st, 1873)
RELATING TO THE AVAILABLE QUANTITY AND
PURITY OF THE MYSTIC WATER AND TO
OTHER MATTERS CONNECTED WITH
AN ADDITIONAL SUPPLY FOR
BOSTON.

CITY OF BOSTON.

Office of the Cochituate Water Board,
Boston, January 7th, 1874.

To the City Council of the City of Boston: —

In compliance with the order of the City Council of Oct. 27, 1873, requesting the Cochituate Water Board to investigate and report upon the following matters: — "The present condition of water in Mystic pond, as regards quantity and purity; the approximate cost of obtaining a supply from said pond for the City of Boston; the objections, if any, to relying upon the same as a source of supply; the condition of the present conduit from Lake Cochituate, as regards capacity and safety; and the changes needed to prevent any waste of the present supply; —" the Board asks leave to reply: —

That its attention was called to the Mystic pond as a source of supply for this city some two years since by their Engineer (See City Doc. No. 29, 1873), but after due consideration it was dismissed from the list of practicable sources, which the Water Board thought its duty to recommend to the City Government; but, after the receipt of the above order of inquiry, and recognizing the wide differences of opinion existing in the community, as to the quality of the water as well as to the capacity of the Mystic basin as a source of *permanent* supply for the City of Boston, the Board, as a matter of justice to itself and its engineer, has thought it judicious and proper to have the whole subject investigated independently, by thoroughly competent persons, so that, after the investigations were closed and the facts presented, the questions should be definitely settled in every reasonable mind. With these views, the services of two eminent hydraulic engineers, Mr. James P. Kirkwood, of Brooklyn, N. Y., and Mr. James B. Francis, of Lowell, Mass., were secured as an Engineering Commission, and the Board was equally fortunate in securing Prof. E. N. Horsford, of Cambridge, to investigate as to the purity of the water. All these investigations, and the results, will be found in their reports, in the succeeding pages of this document, and are worthy of the careful attention of the City Council, and of citizens generally. The facts given with regard to the Mystic basin are in close approximation to the information that was already in possession of the Board, from the report of its engineer (the present City Engineer), and stated in general terms in the City Document above referred to, and show not only that the extravagant claims made for this basin as a source of permanent supply were, in a large degree, unfounded, but that an imperative duty exists for the city to take the most effectual means for securing that supply from some other and more practicable source, for its rapidly increasing territory, population and industries, at the earliest moment.

COMBINED SUPPLY FROM THE COCHITUATE AND MYSTIC.

The report of Messrs. Kirkwood and Francis states, that by utilizing (at an expense of $994,562 for storage reservoirs) all the available storage capacity of the Mystic basins, including the lower Mystic lake, a total supply of 18,000,000 gallons daily may be secured, and that a more moderate expenditure for reservoirs will provide a supply from which a surplus of about 5,000,000 gallons may be applied to the use of Boston, until 1880 or thereabouts, when the increasing demands of Charlestown and East Boston, and the towns depending upon the Mystic works, will begin to curtail it. It is also stated, that the Cochituate conduit should not be relied on "to convey more than 17,000,000 gallons in any one day." These statements should be considered together, in computing the total supply available to Boston for the next few years.

The consumption in Boston during 1873 was about 18,000,000 gallons daily, and largely in excess of the previous year, due partly to a reckless use of hand-hose, leakage in the burnt district, and an increased head in portions of the city, as well as to the increased number of water-takers. The consumption is very unequal in different months, and to maintain the supply during the summer months it was found necessary to use the conduit under a pressure that would give a flow of over 20,000,000 gallons in twenty-four hours, and even then the reservoirs were drawn down to a point that reduced materially the water held in reserve to supply the city in case of accident to the conduit. If the maximum flow of the conduit is to be limited to 17,000,000 gallons in twenty-four hours, the supply will not on an average much if at all exceed 15,000,000 gallons daily. To operate the Cochituate Works *safely*, an additional supply of 3,000,000 gallons daily is required at once; and the supply which can be safely obtained from the Cochituate Works, combined with that which may be secured from the Mystic (some two years hence), will give an excess of only 2,000,000 gallons daily, above the use of the past year, to meet the future increase in consumption, which will follow from increase of population, by natural growth and by annexation. By using all the storage area offered by the Mystic basin, this excess may be increased to some four or five millions, an amount which, at the rate of increase in water-takers that has ruled for the past few years, will be absorbed in four or five seasons.

If the conduit is to be operated as it was found necessary to operate it the past year, — in a manner which it is proper to say, the Water Board and its officers consider decidedly unsafe, — the excess will be further increased by about three millions of gallons. This is upon the supposition that the Cochituate water-shed will yield a supply of 18,000,000 gallons daily; but the fact is, it cannot be relied upon to do so. The following table exhibits the total quantities of water, stated in daily averages, that entered the lake from its water-shed during various years, and of which in some years a large portion was necessarly wasted over the dam during floods: —

Year.	Gallons per day.	Year.	Gallons per day.
1853.	17,873,800.	1858.	17,759,013.
1860.	17,714,065.	1864.	15,370,152.
1866.	14,265,280.	1871.	13,197,800.

The yield of the Cochituate water-shed in a season of extreme drought has been estimated by the City Engineer, Mr. Jos. P. Davis, at 12,000,000 gallons daily; but, as seen above, in 1871, which cannot be considered such a season, it actually was only 13,197,800 gallons. Add to this the 5,000,000 gallons that may be taken from the Mystic, and there is 18,000,000 gallons, just equal to the consumption of the past year, 1873. To state the case plainly, and it does seem that the time has come to so state it, this city will be dependent upon good fortune, that is, upon heavy rains and freedom from accident to the works, for a full supply of water, during the next few years, even if the Mystic be drawn upon, unless an auxiliary supply is taken from the Sudbury river, as in 1872. As matters now stand, the city has no rights in the Sudbury river, and would unquestionably be prevented by the mill-owners and others interested, from again drawing from it unless the river is legally seized under the Act of the Legislature authorizing the taking. If it be decided to abandon the Sudbury river project, the city will be forced to rely upon the Cochituate and Mystic districts, from which, by an expenditure of some one and a half millions of dollars upon the latter, in two years a total daily supply of about 22,000,000 gallons can be furnished; *provided* that the rainfall is favorable, and the Cochituate conduit is operated under objectionable pressure during the months of greatest consumption.

THE SUDBURY RIVER.

During the early months of 1872, while the pumping engines were at work in Lake Cochituate, in consequence of the unprecedentedly low state of the water, application was made by the city to the Legislature for power to take water from an independent source of supply; and the Water Board was informed by the legislative committee that it must limit itself to two sources, though the Board had asked for a general act with the design of selecting the best source, after a careful study and survey of the whole question. A pretty thorough examination had been hurriedly made of the different available water districts within reasonable distance from the city, including the Ipswich and Saugus rivers at the north, the great lakes of the Middleborough district at the south, and the Merrimac river at the northwest. All these were rejected, however, either for their large cost, impurity of water, difficulty of connection with the present system of works, want of storage capacity, or insufficient amount of water for the needs of the distant future. The only course, therefore, was to look to the west, where were found the Charles, Sudbury, Assabet, and Nashua rivers and Lake Quinsigamond, which, combined, would give a daily supply of 220,000,000 gallons, and all of which could be brought to Chestnut Hill Reservoir in the same conduit. The Water Board selected the Charles and Sudbury rivers; but during the hearing before the legislative committee, a strong and decided opposition was made to the taking of the Charles river, except upon such conditions und restrictions as were entirely inadmissible; and therefore, upon the promise of the committee to report a favorable bill for the Sudbury, the Charles was dropped and a bill for the Sudbury was reported and passed by the Legislature. Doubtless the facility with which the water of the river could be turned into Lake Cochituate to supply a pressing temporary want in that basin had some considerable weight in the selection; but careful study and survey of its capabilities as a source of permanent supply revealed facts of a very favorable character. These were: The large amount and good quality of the water; its excellent storage facilities and easy control; comparatively moderate cost of construction, the shortness of the conduit line to Chestnut Hill Reservoir, the great point of distribution; and the comparative present and prospective freedom from pollution of the water-shed. Its combined value in all these essentials is such that the Water Board has seen no reason to regret its selection or doubt the wisdom of the choice. The rapidity with which its waters can be turned into the lake has already been proved at a time of some considerable public peril.

The Sudbury, with its ample storage basins, in a season of drouth will yield a minimum supply of 40,000,000 gallons daily, and in favorable seasons a supply of 50,000,000 gallons or more; should occasion demand in the future, it can be easily connected with the Assabet river, from which nearly an equal amount can be drawn, and the practicability of its connection with the other water districts named above is an equally assured fact. The connection with the Charles river would be by pumping works at South Natick, all the others by gravitation. In the Sudbury river scheme of works, not only has the needs of the immediate present been duly considered, but the future has been amply cared for.

Efforts seem to have been made to prejudice the Sudbury river scheme, by misrepresenting its cost, and the time required for its construction. It has been claimed that it will cost between twelve and fifteen millions of dollars, and that it cannot be completed short of ten or twelve years' time.

Those making these misrepresentations entirely ignore the careful and exhaustive surveys, and the liberal estimates founded upon them by our able and experienced engineers. The Water Board has no hesitation in saying, there is not the slightest foundation for such statements, that there is no reason for distrusting the professional skill of, or the facts and estimates given by the engineers, in their report as to the cost or the time required for construction ; most certainly not upon the reckless statements of those having no practical experience in engineering works. So far as the amount of water or mill damages to be paid is concerned, the Board can only say that this matter will be determined before a Massachusett court and jury, and upon competent evidence as to the real amount of damage caused by diverting the water of the river ; it has no fear but that the verdict will be an equitable one, and the damages not excessive. But it must not be forgotten that the City of Boston cannot take water from any practicable source without paying for it, and it is not at all probable that the cost will be larger, in proportion, for the Sudbury river, than for water taken from any other source.

When the present Cochituate conduit was constructed, it was generally considered that the city had secured an ample water supply for the next fifty years at least. But a little more than one-half of that period has passed, with the results which are now under consideration. The lesson is a very useful one, not only to the City Government, but to all concerned. After mature deliberation upon all the numerous questions involved in the general subject of securing a permanent and ample supply of water for domestic, fire, manufacturing, and other uses for a rapidly growing community like this, the Water Board finds ample reasons for again recommending the most energetic action for the construction and early completion of the Sudbury river supply for the City of Boston. The adoption of any policy which shall restrict the supply of water for all legitimate uses, will be a mistaken and unfortunate one; and this will apply with great force to the territory recently annexed and that hereafter to be annexed, and with still greater force to the numerous manufacturing industries that are springing up in and near the city limits. The fear of an insufficient supply would tend to restrict and dwarf a great many industrial establishments in a very large degree, and possibly lead to their location elsewhere. The Water Board feels that a great and growing city like this cannot afford to endanger its progressive prosperity by failure to take the proper action to secure its continuance.

FLAX POND.

In passing, it may be well to take some notice of the persistent efforts which have been made through the public press (probably by interested parties) to induce the taking of Flax pond, in Lynn, as a source of supplementary supply for this city. This source had already been examined and rejected, because of its small area of water-shed; the pollution of the water by the objectionable refuse of manufacturing establishments; the large cost of construction of the works with reference to the amount of water to be obtained; the cost and difficulty of diverting the objectionable sewerage on its shores; and the uncertain amount of damages to be paid for diverting its waters. Subsequently, however, it was deemed advisable to refer the whole question of Flax pond to the engineers, Messrs. Kirkwood and Francis; and they have reported (see pages 24–27) that, in their opinion, it is inadvisable to add it to the present city supply; and for reasons that are nearly identical with those that first led to its rejection by this Board.

LEAKS AND WASTE.

The questions of waste and leakage have received more than ordinary degree of attention during the past year. The large consumption, ruling nearly through the whole year, is not only unexpected, but somewhat alarming. The Board had hoped by a thorough search for leaks both in the street-mains and house-service to reduce the consumption below that of 1872; or, at least, place the works in a condition that would result in an important saving during the present year. While many hundreds of defective fittings that were causing a large waste have been discovered and repaired, no leaks of consequence have been found in the street-mains; and, though the saving that has been effected by the repairs made must be considerable, the consumption of the past two or three months shows that not much relief can be counted upon from stopping leaks.

The examination that has been made, however, has furnished additional evidence of the great *waste* that results from the use of certain classes of fittings, more particularly the hopper-closet. Attention has been frequently called to this matter in former reports, but no action has been taken by the City Council. It is to be hoped that now, when it is of the utmost importance to the city that every gallon of water it can furnish shall be usefully applied, the necessary powers will be given the Water Board to control, as far as practicable, the harmful waste that is now going on through improper fittings. In many instances, as has been proved by meter measurements, the owners of a single hopper-closet are using, or rather wasting, at a cost to them of only *five dollars* per annum, as much water as the manufacturer uses whose yearly water-rate amounts to some hundreds of dollars. This great waste subserves no sanitary or other useful purpose, and should at once be repressed by the most vigorous measures. Even if the saving of water were not so important, the injustice of such unequal taxation would condemn the present system. This very important matter is more fully discussed in the annexed report of Mr. Wm. F. Davis, the Water Registrar, to which you are referred for more detailed statements.

ANALYSES OF THE WATER OF FARM POND, SUDBURY RIVER, AND LAKE COCHITUATE.

An order was passed by the City Council, November 10th, 1873, requesting the Water Board to have made a chemical analysis of the waters of Farm pond. In complying with the request, the Board has also had analyzed a sample taken from Sudbury river, another from its most important tributary, Stony brook, and two from Lake Cochituate.

The analyses, the results of which are given in the following table, have been made by Messrs. Merrick and Gray, analytical chemists, who had no knowledge of where the samples were taken: —

	A	B	C	D	E	F
	Stony brook.	Sudbury river.	Farm pond. Surface	Farm pond. 7 ft. deep.	Lake. near gate house.	Lake. Southern division.
	Grains in U. S. gal.	*Grains in U. S. gal.*	*Grains in U. S. gal.*	*Grains in U. S. gal.*	*Grains in U. S. gal.*	*Grains in U. S. gal.*
Suspended matter	0.48	0.31	0.23	0.15	0.24	0.40
Inorganic	2.10	2.39	1.98	1.75	1.87	2.26
Organic	1.69	1.80	1.16	0.99	1.10	1.92
Total	4.27	4.50	3.37	2.89	3.21	4.58
Silica, oxide iron, alumina, etc.	0.73	0.70	0.54	0.38	0.40	0.70
Chlorine as Chloride Sodium	0.35	0.40	0.35	0.35	0.32	0.30
Albuminoid Ammonia . .	0.0147	0.0139	0.016	0.013	0.012	0.015
Ammonia	0.003	0.004	0.004	0.0041	0.005	0.004
	0.0177	0.0179	0.02	0.0171	0.017	0.019

All the samples were taken Nov. 7th, 1873.

Sample A was taken from Stony brook, about 500 feet above the proposed location of Dam III.

Sample B was taken from Sudbury river, about 200 feet above the wooden dam, built by the city in 1872.

Sample C was taken from the surface of Farm pond, about 400 feet north of the proposed location of the gate-house for the new conduit.

Sample D was taken at the same point in Farm pond, but 7 feet below the surface.

Sample E was taken from Lake Cochituate, near the gate-house of the conduit.

Sample F was taken from the southern division of Lake Cochituate, at the culvert under the turnpike, and near where Beaver Dam Brook (the chief tributary of the lake) discharges.

Mr. Merrick makes the following remarks: —

Sample A.

"This water was yellowish, inodorous, tasteless, with some slight flocculent deposit after standing. The unconcentrated water gave indications of ammonia by the Nessler test."

Sample B.

"This sample was yellowish, tasteless, inodorous, with some flocculent deposit on standing. It gave slight indications of free ammonia by the Nessler test."

Sample C.

"This sample was nearly colorless, tasteless, and inodorous, with a very slight flocculent deposit after standing. It gave exceedingly faint indications of ammonia, unconcentrated."

Sample D.

"This sample was colorless, or nearly so, inodorous, and giving a trifling deposit on standing. It gave very faint indications of ammonia."

Sample E.

"Nearly colorless, with faint, yellowish tint, inodorous; some deposit of reddish flakes. It gave exceedingly faint indications of ammonia."

Sample F.

"This water was yellow, inodorous, and tasteless, with considerable flocculent deposit. The unconcentrated water gave indications of the presence of ammonia by the Nessler test."

The analyses show Farm pond water to be very pure and free from objectionable qualities of all kinds. There had been no flow into the pond, except surface drainage, for over a year before the samples were taken, and the outflow had been very slight, just sufficient to keep the pond at a proper level.

The two samples from Cochituate were analyzed to show the effect of storing and exposure to the air in purifying the water. Sample F may be regarded as a fair (favorable rather than otherwise) specimen of the quality of the water from the Cochituate water-shed as it enters the lake. Sample E — a fair specimen of the same water after it has reached the entrance to the conduit.

EFFECTS OF STORAGE ON WATER.

It will be noticed, by consulting the table, that the effect of storing has been to greatly improve the quality of the waters, and to notably decrease the amount of organic matter, which is the impurity the most to be feared; in fact, the inorganic impurities may be said to be perfectly harmless.

This beneficial effect of storing and exposure is more strongly shown in the samples of water from the Mystic, analyzed by Professor Hosford, as will be seen by consulting his report. The waters tributary to the Mystic are vastly more charged with impurities, both mineral and organic, than those of the Cochituate or Sudbury water-shed; yet, during the exposure to the air to which they are subjected on entering and passing through the Mystic lake, they become purified and rendered fit for domestic use.

The samples from the Sudbury valley were taken when the river was swollen by previous rains, and the water more than usually charged with organic or vegetable matter, yet the analyses show very favorably for the purity of this water when compared with that of the Cochituate or Mystic districts before it enters the lakes.

It can be safely said that the Sudbury water, after having been stored, and by the time it reaches the consumer, flowing, as it will, exposed to the air in Farm pond and 17 miles of conduit, will be nearly, if not quite, equal in purity to the Cochituate.

That all the points bearing upon this question of purity, which are known to the Board, may be placed before you, the following remarks from the Report of the City Engineer, submitted to you in March, 1873, are quoted: —

"Previously to the selection of the Sudbury as the new source for the additional supply, no analysis of its water had been published or was at command. There were, however, various reasons for believing that it is unusually free from deleterious matter either in solution or held suspended. Such was the testimony of all persons consulted, who had observed and used it. It is used, as taken from the river, in all the processes of bleaching, and is noted for its fitness for the purpose, which would indicate that it is generally free from color, and from matter in suspension. The country drained is of a character to insure purity of supply; it is for the most part very sparsely populated, contains few or no soluble rocks or earths, has quick drainage slopes that are not much cultivated, and maintains on its streams comparatively little manufacturing of an objectionable nature. After heavy rains in the summer and fall, when the drainage surfaces are covered with dead and decaying vegetable matter, the waters of rivers draining cultivated districts, or districts covered with forests and grasses, unusually become more or less colored by such portions of this vegetable matter as are readily taken up in solution, or as have been washed into the streams and are held in minute forms, mechanically suspended.

"The conditions in regard to the frequency of the rains and the amount of vegetable substances in a ripe state to be acted upon, that have obtained during the past summer and fall, have been such as to develop and maintain a high color in river waters generally. Owing to the dryness of the previous year, there has been an unusual accumulation of vegetable matter ready to be taken up, either in solution or suspension, and there have been constantly recurring rains of a magnitude to produce a complete saturation of this matter, and a flow over the land surfaces to the streams. All the streams in this part of the country appear to have been affected to an unusual degree. The color began to be noticeable in the Sudbury water early in July, and continued in a marked degree till near the close of the year. It was of sufficient intensity to render the water, as taken directly from the river, unfit for washing and many other purposes.

"Samples were taken when it was at its worst state, and submitted to chemists for analysis. The following are the results obtained.

"Analysis by Dr. S. D. Hayes of Boston: —

Specimen A.

Organic matter	4.08 grains.
Mineral "	1.64 "
Total of impurities in one gallon . .	5.72 "

"Dr. Hayes adds, 'Specimen A is brownish yellow and almost brandy-colored: it contains $4\frac{8}{100}$ grains of purely vegetable matter, like that obtained by soaking leaves having a high tinctorial power. This water is objectionable from its color and the comparatively large proportion of vegetable matter present, but it is free from animal matter or dangerous drainage.'

"Analysis of Professor Chandler, of New York: —

Specimen A.

Organic and volatile matter	2.03	grains.
Inorganic	2.93	"
Total solids in one gallon	4.96	"

"The fact is made evident in the above analyses that there may be present, at times, a large and objectionable amount of organic matter of vegetable origin, and while it is not probable that the conditions which have caused this state of the water will again exist in an equal degree, except with long intervals, it is nevertheless important to be assured that when they do exist the water can be made fit for general use.

"In 1867, commissioners were appointed to investigate the question of proper sources of supply for London and other large cities, before whom were summoned a great number of prominent chemists, and other scientific men, to give their views upon impurities in water. The commissioners, in their report, say: —

"'The organic compounds dissolved in water appear to be of very instable constitution, and to be very easily decomposed, the great agent in this decomposition being oxygen, and the process being considerably hastened by the motion of the water. Now, as such waters (river waters) always contain naturally much air dissolved in them, the decomposing agent is ready at hand to exert its influence the moment the matter is received into the water, in addition to which, motion causes a further action by exposure to the atmosphere. . . . The effect of the action of oxygen on these organic matters, when complete, is to break them up, to destroy all their peculiar organic constitution, and to rearrange their elements into permanent inorganic forms, innocuous, and free from any deleterious quality. It does not follow that all organic matter in water is prejudicial, . . . almost all our drinks, other than water, owe their distinctive qualities to the varieties of their organic contents.'

"Dr. Lyon Playfair, Professor of Chemistry in the University of Edinburgh, in his testimony before the commissioners, states: —

"'The effect of organic matter in the water depends very much upon the character of that organic matter. If it be a mere vegetable matter, such as comes from a peaty district, even if the water originally is of a pale sherry color, on being exposed to the air in reservoirs, or in canals leading from one reservoir to another, the vegetable matter gets acted upon by the air, and becomes insoluble, and is chiefly deposited; and what remains has no influence on health.'

"From our own experience in the use of the Sudbury water last summer and fall, when, as taken from the river, it was highly colored, and from some experiments since made, there are strong reasons to believe that the effect of storage in large reservoirs, and of the exposure to air in a long conduit running but partially full, will be to in part or wholly decompose the organic impurities, and destroy the color. In July and August the Sudbury water was entering Lake Cochituate at the rate of from twenty to thirty millions of gallons per day, and in addition a large supply was received from the streams naturally tributary to the lake, which possessed an equal color with that of the Sudbury water; yet when these waters reached the pipes for distribution, no color was noticeable, and the slightly bitter taste, which they originally had, was lost.

"The gradual extinction of the organic matter is shown by an examination of the following table, which gives the results of analyses of three samples of water taken; the first from the Sudbury at the new dam; the second from the southern division of the lake, where the supply from the Sudbury and from Beaver Dam brook (the most important tributary to the lake) entered, and the third from the northern division, near the mouth of the conduit.

By whom analyzed.	*Specimen A.*			*Specimen B.*			*Specimen C.*		
	Impurities in grains per gallon.			Impurities in grains per gallon.			Impurities in grains per gallon.		
	Mineral	Organic	Total.	Mineral	Organic	Total.	Mineral	Organic	Total.
Dr. Hayes	1.64	4.08	5.72	1.68	2.40	4.08	1.65	1.71	3.36
Prof. Chandler	2.93	2.03	4.96	2.45	1.40	3.85	1.87	0.81	2.68

"The remarks of Dr. Hayes upon specimen A have already been given; with reference to the other samples he says:—

"'Specimen B is also tinted brownish-yellow, and has the characters of specimen A, but in a lesser degree. This water is as pure as that supplied to several cities in New England.

"'Specimen C is almost colorless and tasteless. It is a very pure water for drinking and all household purposes. Although the proportion of vegetable matter present is larger than could be desired, it is not of an objectionable kind.'

"Sudbury river water, stored in Farm pond, after its connection with the river was shut off in the fall, and also when kept in bottles loosely corked, was found to grow lighter in color from day to day, although it still maintained its deep tinge in the river itself.

"Messrs. Merrick and Gray (analytical chemists) made an analysis of a sample taken in December last, when the river still had a decided tinge not usual to it, and found 3.23 grains of impurities of all kinds, to each U. S. gallon, of which 1.34 grains were organic matter. These amounts are somewhat less than were found by Dr. Hayes, in his analysis of specimen C, taken from Lake Cochituate during last summer, and they would, beyond doubt, be greatly reduced by storage of the water and long exposure to the air.

"The Cochituate water was received in the city in a clear and perfectly acceptable state, and was pronounced by Dr. Hayes as very pure for drinking and all household purposes. From a sanitary point of view, the harmless nature of vegetable matter in water, unless in large quantities, is generally conceded. The testimony of chemists before the commission, already quoted, was unanimous on this point. Its great objection is the slightly bitter taste it sometimes imparts, and the brownish color it produces, a color which renders the use of the water for domestic purposes disagreeable.

"From the facts before us the conclusions may be drawn, first, that usually the water of the Sudbury river is clear and pure, and well suited for a domestic supply; second, that although subject, like all rivers, to temporary impurity of a vegetable origin, that impurity may be reduced to a harmless and inappreciable quantity by exposure to the air in storage basins and the conduit."

The accompanying very elaborate report of Prof. Horsford, on the purity of the water of the Mystic basin, is commended to your careful attention.

CONDITION OF THE COCHITUATE CONDUIT.

A very thorough examination of the whole length of the conduit has been made by skilled experts familiar with such structures, and the details of the examination, reported by Mr. D. W. Cunningham, First Assistant Engineer of "New Supply," are herewith presented for your consideration. While the conduit will be operated with great care and closely watched, and while there is but little fear of disaster happening, yet measures have been already taken to meet any break in its weaker points by the construction of wooden flumes, ready to be applied at once at any exposed point; so that if any break should occur it can be repaired in the shortest possible time. While the condition of the conduit is and has been for the past year a constant source of anxiety to the Board, it trusts, by extra care and watchfulness, to avert any serious disaster that may imperil the uninterrupted flow of Cochituate water to the city.

In conclusion, the Board has the pleasure of stating that the income for water is steadily increasing from year to year, the receipts of the past year showing an advance over those of the previous year of over one hundred and seven thousand dollars.

For the Cochituate Water Board,

JOHN A. HAVEN,

President.

ERRATA.

Page 9.—Sixth line, for *widely*, read *rudely*.
“ 9.—Sixteenth line, for *plank*, read *flash*.
“ 9.—Twentieth line, for *plank*, read *flash*.
“ 12.—Fifth line of Table, for 100, read 60.
“ 15.—Fifth line, for *storage*, read *drainage*.
“ 16.—Second line from bottom, for 1882, read 1880.
“ 18.—Sixth line, for *cubic*, read *lineal*.
“ 19.—Eleventh line, for *colorless*, read *soft*.

CITY OF BOSTON.

BOSTON, December 11, 1873.

JOHN A. HAVEN, ESQ.,
President Cochituate Water Board: —

SIR, — The order of the Board of Aldermen of October 27th, 1873, to which you have referred us, requests the Cochituate Water Board to furnish information to the City Council upon the following points, viz.: "the present condition of the water of Mystic pond, as regards quality and purity; the approximate cost of obtaining a supply from said pond for the City of Boston; the objections, if any, to relying upon the same as a source of supply; the condition of the present conduit from Lake Cochituate, as regards capacity and safety; and the changes needed to prevent any waste of the present supply."

We ask your attention first, to the Mystic lake and its water-shed, confining ourselves first to the quantity, without reference to purity, which can be relied upon as obtainable from that basin.

This quantity is ruled by the annual flow of water from the basin during a very low season of rainfall, unless the ground admits of such a capacity of storage reservoirs as will allow of the waters of a wet season being held in reserve to supplement a dry season, which is rarely the case, and not practicable in the Mystic water basin. If we predicate the available water upon any other than the delivery of a very dry season, we run the risk of exposing the communities depending on it to a lack of water during the exceptional seasons which so certainly occur at, it may be, long intervals; and to the distress and distrust following such a condition of the water supply.

There is a considerable population now depending upon the water of this valley, whose rate of growth and increased consumption of water it is desirable to understand in this connection.

The places now using the water, in connection either with the Charlestown Water Works, or with independent works of their own, are as follows: —

Charlestown,	Population	in	1870,	28,323
Somerville,	"	"	"	14,685
Chelsea,	"	"	"	18,547
East Boston,	"	"	"	25,484
Everett,	"	"	"	2,220
Revere,	"	"	"	1,197
Woburn,	"	"	"	8,560
Winchester,	"	"	"	2,645
Total,				101,661

The growth of this population must be assumed rather as a matter of judgment, than from any data derivable from the statistics of the past thirty years, for the decennial percentage of increase during that time, as the following table will show, is very irregular. The populations of Woburn, Winchester and that neighborhood have been considerably increased by the many and important tanneries established there, which are very likely to go on increasing regularly with the growth of the country. The populations of Charlestown and East Boston might be expected to sympathize with the numerical increase of Boston, but yet within the last thirty years they seem to have increased in a much higher ratio.

The percentages of increase of the Woburn and Winchester populations from 1850 to 1860 were respectively 58.9 and 43.2, while the increase of Charlestown during the same period was 45.6, and East Boston, 71.7.

	Charlestown.	East Boston.	Somerville.	Chelsea.	Everett.	Revere.	Woburn.	Winchester.	Totals.	
1840.	11,484	6,000	2,000	2,390	. . . . . .	. . . . . .	2,993	. . . . . .	24,867	1840.
Per cent. increase .	49.91	64.95	77.00	180.37	. . . . . .	. . . . . .	32.17	. . . . . .	71.56	Per cent. increase.
1850.	17,216	9,897	3,540	6,701	. . . . . .	. . . . . .	3,956	1,353	42,663	1850.
Per cent. increase .	45.59	71.68	126.69	99.89	. . . . . .	. . . . . .	58.92	43.17	68.06	Per cent. increase.
1860.	25,065	16,991	8,025	13,395	. . . . . .	. . . . . .	6,287	1,937	71,700	1860.
Per cent. increase .	13.00	49.98	82.99	38.46	. . . . . .	. . . . . .	36.15	36.55	41.78	Per cent. increase.
1870.	28,323	25,484	14,685	18,547	2,220	1,197	8,560	2,645	101,661	1870.
1860.	25,065	16,991	8,025	13,395	. . . . . .	. . . . . .	6,287	1,937	71,700	1860.
Per cent. increase .	5.32	21.05	16.55	7.52	. . . . . .	. . . . . .	11.32	1.60	11.14	Per cent. increase.
1865.	26,399	20,568	9,353	14,403	. . . . . .	. . . . . .	6,999	1,968	79,690	1865.
Per cent. increase .	7.28	23.90	57.01	28.77	. . . . . .	. . . . . .	22.30	34.40	27.57	Per cent. increase.
1870.	28,323	25,484	14,685	18,547	2,220	1,197	8,560	2,645	101,661	1870.

The period between 1860 and 1870 gives an exceptional indication of the progress of the populations, because the war checked seriously its increase in New England, and in some places, as at Lowell, showed a reduction in the population of 1865 as compared with that of 1860; but after 1865 the enterprise of the country was rapidly recovering itself, and the increase of the population then would come nearer to the conditions of a natural and healthy growth. The increase during this period of five years was for Woburn, 22.3 per cent.; Winchester, 34.4 per cent.; Somerville, 57.01 per cent.; Charlestown, 7.28 per cent.; East Boston, 23.9 per cent.

If we take the last decennial rate of increase of the entire population of the places referred to as some guide to its rate of increase in the future, it will be erring on the side of moderation, since that period includes the years of the war already alluded to.

This increase between 1840 and 1850 was 71.56 per cent.
" " " 1850 " 1860 " 68.06 " "
" " " 1860 " 1870 " 41.78 " "

Throwing off the period between 1860 and 1865, when the increase was but 11.14 per cent., we have for the period between 1865 and 1870, a rate of increase in five years of 27.57 per cent.

The decennial increase of the City of Boston was, for the ten years before the war (1850–1860), 29.92 per cent.; for the ten years including the war (1860–1870) it was but 17.76 per cent.

Without being able to extract from the above statements any rate of increase which would be entirely acceptable, we will assume a decennial increase of 40 per cent. as moderate and reasonable for the aggregates of the populations of the places enumerated, between 1870 and 1890; reducing the rate to 35 per cent. between 1890 and 1900, and to 30 per cent. thereafter. These rates are lower than the tabular figures above given may seem to warrant, but we have to keep in view that as the population increases the rate of growth usually decreases; and, besides, we are aiming at moderation in a statement which does not admit of nice computation.

The following table exhibits the condition of the population under this assumption up to 1910, and the corresponding consumption of water at the rates of 60 and 70 gallons a head: —

Aggregate population of the eight places enumerated.	Probable consumption of water at 60 and 70 gallons per head.	
	70 gallons per head.	60 gallons per head.
1870 101,661		
Increase taken at 40 per cent.		
1880 142,325	9,962,750	8,539,500
Increase taken at 40 per cent.		
1890 199,255	13,947,850	11,955,300
Increase taken at 35 per cent.		
1900 268,994	18,829,580	16,139,640
Increase taken at 30 per cent.		
1910 349,692	24,478,440	20,981,520

The rate of 60 gallons a head would usually be considered liberal, except where there is much shipping, or much wharfage likely to be well occupied in the future by ships and steamers. In the last case even 70 gallons a head is found inadequate. We have added the rate at 70, because the results given by the 60-gallon rate would soon be overreached, if the annual increase in the consumption of water, shown by the reports of the Mystic Water Board, is to continue to follow the same proportion.

The average consumption per diem was: —

In 1870,	3,849,575 gallons.
" 1871,	5,082,972 "
" 1872,	6,766,056 "

In 1880, according to this rate of progress, the highest figures given for that year, in the table, would be exceeded, but much may be done in the future to save that portion of the water which is now wasted at neglected joints and fittings. It is to be observed of 1870 that the population given in the table for that year includes three places which were not supplied with water then; when the necessary deductions are made and the rate of 60 gallons a head applied to the population using the water that year, the result but little exceeds the reported consumption of 3,849,575 gallons per diem.

We come now to the quantity of water derivable from the Mystic basin.

The percentage of the rainfall which flows off, or can be collected from any basin, varies with the climate, and with its position, and its geological character; of the rain falling during the summer months, June to October, comparatively little reaches the brooks.

The rain of the winter and spring months, November to May, reaches, in large part, the brooks, and forms our main dependence for storage.

The only records of the rainfall on the Mystic water-basin are those kept at the Mystic lake. For 1870 and 1871 the rainfall there was unusually low, and were these data true of the entire basin it would be difficult, if not impossible, to count on 12 inches of the amount during equally low seasons, except by having the ability to make a wet year contribute to the supply; that is, to be able to combine the flow of three years so as to be ahead of the supply of two such low years as this record exhibits. But in the upper portions of the basin, towards its high grounds, a greater depth of rain had very probably fallen.

In the following table there is added the rainfall at Cambridge, Lowell, Lake Cochituate, and Boston, going to show that the Mystic lake station, if correctly observed, gave for these years, at least, exceptionally low results. If, however, we look back to the returns of other places in the vicinity of Boston, we find one year which may be taken as a warning, when the rainfall that prevailed was unusually low, and being well corroborated cannot be set aside as growing out of erroneous observations.

In 1846, the rainfall at Boston was 29.95
“ “ “ Waltham “ 26.90
“ “ “ Lowell “ 28.03
“ “ “ Cambridge “ 30.37

These are sufficient to show that a very small amount of rain fell in that year, but luckily the years on either side of it were much more abundant in that respect.

In 1822, at Boston, the record gives but 27″.20 of rain; in 1837, at Lowell, 30″.86; in 1855 the lowest of the Cochituate series is 34.96. From all of these we see that the lowest rainfall will sometimes be below 30 inches, though we have no record below 26.90, except those of 1870 and 1871, at Mystic lake, given below.

Table of rainfall for 1870–71–72: —

	1870.		1871.		1872.	
	The twelve months.	Seven mont's Nov. to May.	The twelve months.	Seven mont's Nov. to May.	The twelve months.	Seven mont's Nov. to May.
Mystic Lake	24.65	16.09	24.36	13.28	45.05	13,99
Cambridge Observ'y.	41.53	28.90	40.50	22.37	52.73	21.68
Lowell	48.70	32.28	44.15	25.16	48.66	23.36
Lake Cochituate . .	50.65	32.51	48.29	29.71	45.74	18.29
Boston (South yard)	59.73	39.06	48.33	29.60	58.04	24.92

For the percentage of rainfall collectable from any basin we have to rely generally on the judgment of the engineer. Where, as at the Cochituate lake for the Cochituate basin, and at the Croton lake for the Croton basin, daily records have been kept of the depth of water flowing off, these, even when widely taken, afford some better measure of the water reaching the main streams than any estimate which would otherwise have to be formed of that amount, gathered from the averages of a long series of observations of rain-fall at places in the vicinity of or within the proper basin. Had the daily observations of the height and flow of water at the Mystic dam been made in such a way as to give correct results, they would have aided us to get a near value of the water reaching that point, to compare with the rain-fall observed there for 1870 and 1871; but on this dam, which consists of six spaces, the plank boards are not always maintained at the same level. The keeper is instructed not to allow the lake to rise above a certain fixed level; to insure this when a storm of rain occurs, encroaching on this fixed plane, he removes a plank board from one, two or more of these spaces, as the case may be, not recording, however, the depth flowing over at each separate space.

Since December, 1871, a fish-way has been in existence, by an act of the Legislature, occupying one of the six spaces above referred to, and passing, according to our calculations, a yearly average of, say, 423,000,000 gallons = 56,600,000 cubic feet. When the pond is $2\frac{1}{4}$ feet below its full water-line this fish-way is inoperative.

Judging from the amount of rain which fell at the other places mentioned in the table, we are of the opinion that the annual rainfall on the upper part and on the greater part of the Mystic basin could not have averaged less than 30 inches for the years 1870 and 1871.

In English practice the amount of the annual rain lost by absorption and evaporation is looked upon as nearly a fixed quantity, amounting to from 10 to 12 inches on ground with steep slopes, and from 14 to 18 inches on ground with easy slopes; the remainder is considered collectable. If we allowed 15 inches in this case there would remain by this rule 15 inches flowing off and capable of being utilized by storage or otherwise. But the English rule has failed in very dry seasons, as at Liverpool, Leicester, and Dublin. It is not necessary to argue how far nor how applicable it may be made to our climate; the experience on the Cochituate basin being on the whole a safer guide in this respect than the other. The flow of that basin has been calculated for the years 1862 to 1871. The percentage of the year's rainfall that reached the lake was least in 1866 (26 per cent.), but the water flowing off at the Cochituate gate-house by its equivalent in inches of the rain falling on the basin was least in 1871, when it was equivalent to 14.68 inches; in 1866 it was 16.01. In the report of Messrs. John B. Jervis and W. R. Johnson, of November 18th, 1845, they state as the result of observations connected with the New York State Canals, "that experiments have been made in this country that show that from one-third to one-half of the annual fall of rain may be collected into a reservoir." Experience since that date has not altered this general view, although it has enabled us, when precise experiments have been made on the flow of streams, to obtain for particular localities a safer guide than any general law can give.

From the same report the following statements would go to show that the equivalent of water collected from the Long pond or Cochituate basin in 1871 (14.68 inches) is not lower than what might have been anticipated of a very dry season. Messrs. Jervis and Johnson state, "that a gauge of the quantity of water which passed the outlet of this pond was made by them (the Commissioners of 1844) in 1837 and 1838. By this gauge the average daily flow from July 27th, 1837, to July 27, 1838, was (15.36 feet per second), say, 9,927,000 gallons per day; and computing the gauge from November, 1837, to November, 1838, the daily average flow was (21.82 feet per second), say, 14,100,000 gallons per day. The survey of the country draining into the pond shows an area of 12,077 acres, including the pond. The quantity found by the Commissioners for the year commencing July 27th, 1837, was 15.36 cubic feet per second. This is equal to 0.975 of a foot, or 11.70 inches in depth that must have been collected from the whole area of drainage. The rain that fell at Boston during the same time was, according to Dr. Hale, 26.65 inches. The ratio of drainage was thereupon 0.439 of the total fall of rain at Boston.

"Taking the Commissioners' gauge at the outlet, for the year commencing Nov., 1837, the discharge averaged 21.82 feet per second. This is equal to 1.385 feet or 16.62 inches in depth collected from the country draining into the pond. The rain that fell during this time at Boston was, according to Dr. Hale, 38.11 inches. The ratio of drainage was therefore 0.436 of the fall of rain in Boston."

"In view of all the facts above presented there appears no reasonable ground to doubt that 0.4 of the fall of rain may be realized as the ratio of the total fall which may be collected from the district that drains into Long pond."

The geological character of the Mystic basin is essentially the same as that of the Cochituate basin; the rocks are of the same general character, and the same may be said of the gravelly or stony earths covering them.

We shall therefore assume in this connection that an equivalent of 15 inches of water may flow off from it during the driest year.

The drainage area of the basin is computed to include 26.04 square miles; deduct for water area of Mystic lake and of the ponds and proposed reservoirs 1.53, and there remains 24½ square miles as the area of its water-shed. Fifteen inches of water from 24.5 square miles is equal to 853,776,000 cubic feet annually.

This amount, if the surplus of its storm waters could be stored and meted out as needed, would be equal to a daily supply of 2,339,112 cubic feet, or 17,497,765 gallons.

The amount of storage desirable to apply usefully the whole of this amount of water is luckily obtainable in this basin, although its available valleys are shallow, and in this respect objectionable for such a purpose. The examination and surveys made within the last two months to that end show that the following storage reservoirs admit of being constructed here. Their positions and relative water areas will be best understood by reference to the accompanying map.

Where the low grounds within these reservoirs are swampy, the muck, brush, and other objectionable matter is supposed to be removed, in order to secure a colorless and acceptable water, and where the natural ground would give large areas of shallow water the reservoir is supposed to be deepened on the channel lines, and the excavation used to raise the shallowest spots above high-water mark.

All this we consider necessary to secure for the water as far as practicable immunity from the taint which sometimes, though rarely, characterizes the shallow waters of our artificial basins during the summer months.

Available storage basins on the Mystic valley, with their respective water areas.

NAME ON MAP.	Water Area.	Available Capacity.
	Acres.	*Cubic feet.*
No. 1. Storage Basin on West Branch	43	16,711,200
" 2. " " " " "	112	48,732,620
" 3. Horn Pond raised	103	8,000,000
" 4. Storage Basin on East Branch	350	151,006,000
" 5. Winchester Basin	100	34,763,000
" 6. Upper Basin on East Branch	30	13,369,000
" 7. Upper Mystic Lakes	230	44,987,000
Total Storage = (2,375,418,000 gallons)		
		317,568,820

Say 300,000,000 cubic feet, allowing for those portions of the bottom waters which cannot or should not be drawn off.

Reservoir No. 4 supposes the Lowell Railroad, which runs alongside of it, raised 5 feet. If this is not done its storage would be reduced by 62,768,000 cubic feet.

If the restrictions preventing the use of the lower Mystic pond could be removed, the erection of a dam at the lower end would create a storage capacity there of about 40,000,000 cubic feet, provided that the water there could be divested of all trace of the salt water which enters it now, and if it mixes with the fresh water must render it unfit for city use.

The application of this lower pond would give in that case its amount of storage at a less cost, we believe, than an equivalent storage reservoir situated up the valley.

The storage reservoirs, above enumerated, have, then, an aggregate capacity of 300,000,000 cubic feet. This will be a little more than sufficient to insure a daily supply of nearly 17,000,000 gallons during the season of drought which we have been considering.

The following table will explain the action of this amount of storage, and show its aid and effect under this rate of daily consumption. The case is a suppositious one so far as the rainfall applicable to each month is concerned, but the amount of rain flowing off for each month during the year of greatest drought recorded of the Croton basin, and the same for the lowest year of the Cochituate basin, is placed alongside of the amounts assumed for the Mystic basin, for the sake of comparison, as well as to show that our assumptions have a fair measure of probability.

It is always to be remembered that our consideration of the water which can be utilized from this basin regularly through each year, and without fail, refers necessarily to a year of drought.

Effect of the available storage of the Mystic basin; the water utilized taken at 17,000,000 gallons daily, = 2,272,569 cubic feet.

Month.	Water flowing off. Croton Basin in 1864.	Water flowing off. Coch'te Basin in 1871.	Water flowing off. Mystic Basin in year of drought, assumed.	Amount of Rainfall collected for the month.	Amount applied to use.	Amount applied to storage.	Amount drawn from storage.	Amount of Water in store. Total storage capacity, 300,000,000 cubic ft.
	Inches.	*Inches.*	*Inches.*	*Cubic feet.*	*Cubic feet.*	*Cubic feet.*	*Cubic feet.*	*Cubic feet.* 120,000,000.
Jan.	2.270	1.03	1.70	96,761,280.	70,449,648.	26,311,632.	. . . . . .	146,311,632.
Feb.	0.874	2.28	2.10	119,528,640.	63,631,948.	55,896,692.	. . . . . .	202,208,324.
March	1.519	2.29	2.00	113,836,800.	70,449,648.	43,387,152.	. . . . . .	245,595,476.
April	1.623	1.31	1.50	85,377,600.	68,177,079.	17,200,521.	. . . . . .	262,795,997.
May	2.080	1.47	1.40	79,685,700.	70,449,648.	9,236,052.	. . . . . .	272,032,049.
June	0.634	0.54	0.50	28,459,200.	68,177,079.	. . . . . .	39,717,879.	232,314,170.
July	0.201	0.48	0.30	17,075,520.	70,449,648.	. . . . . .	53,374,128.	178,940,042.
Aug.	0.577	0.90	0.50	28,459,200.	70,449,648.	. . . . . .	41,990,448.	136,949,594.
Sept.	0.475	0.57	0.60	34,151,040.	68,177,079.	. . . . . .	34,026,039.	102,923,555.
Oct.	0.940	0.97	1.00	56,918,400.	70,449,648.	. . . . . .	13,531,248.	89,392,307.
Nov.	1.901	1.61	1.80	102,453,120.	68,177,080.	34,276,040.	. . . . . .	123,668,347.
Dec.	1.795	1.23	1.60	91,069,440.	70,449,648.	20,619,792.	. . . . . .	144,288,139.
	14.892	14.68	15.00					

From this amount there must be deducted what has been used or lost at the fishway, occupying one of the six spaces on the Mystic dam. This fishway was passing off on the 25th of November last, when we gauged it, about its average quantity, according to Mr. Symmes, the person in charge of the works there. During the four months, April to July, it passes more, lessening during the other months. When the level of the lake is drawn down below a certain line, it ceases to flow. From our gauging and Mr. Symmes' explanations, we make the following estimates of the amount wasted here per year.

In 1870 (86 days not running,)	398,945,000 gallons.
" 1871 (68 days not running,)	420,480,000 "
" 1872 (running all the year,)	501,875,000 "
" 1873 (100 days not running,) . . .	371,935,000 "
	1,693,235,000

Average loss per year equal in gallons, 423,308,750 = 56,600,000 cubic feet.
This would make the amount in store at the end of the season . . . . = 87,688,139 cubic feet.

It seems hardly necessary to observe that while these reservoirs can be filled and applied by an intelligent attention to their special conditions, they cannot be used throughout the year pro rata of their capacities; but while from some, where the storage area is in excess of the available capacity, there would be drawn regularly much more than the capacity would indicate, from others, differently situated, an opposite course would have to be followed.

It will be perceived from this table, that but for the fishway, the amount in store at the end of such a season would have been greater than at the beginning of the season, allowing in that case of a yearly consumption averaging 17½ millions gallons, but the action of the fishway makes the amount in store at the end of the season less than at the beginning by 32,311,861 cubic feet, reducing the daily average which can be relied on to about 16⅓ millions gallons.

To counteract this reduction, however, it will be observed that while the water stored never exceeded 272,000,000 cubic feet, in round numbers, the storage capacities are equal to 300,000,000, and under this condition of things, a certain portion of the water of the previous year could be accommodated, if that year happened to exceed in its water flow the year we have been considering. If the lower Mystic lake could be made available, it would still further insure the help of a previous year toward what could be gathered in a year of severe drought, and perhaps raise the available yearly average to 18,000,000 gallons.

It must, however, be kept in view, that the great irregularity in the relative amounts of rain falling monthly makes necessary a liberal margin to the amount of provision which would be sufficient for years of average regularity in that respect. The table supposes 120,000,000 cubic feet in store on the 1st of January, because that must include the months of November and December of the previous year, and that reserve of at least one month's supply, which is never supposed to be encroached upon.

Referring now to the table formerly given, showing the estimated condition of the population, and its consumption of water to 1910, we see that if we rate the consumption at 60 gallons per head per day, the rate of 17,000,000 gallons a day would be reached in 1901, and if we take it at 70 gallons a head, it would be reached in 1898.

Stated more succinctly, the waters of the Mystic valley basin, well economized, by proper storage, will probably suffice for the need of the district now depending on it, up to 1900, but not beyond that period.

If a portion of this population should hereafter be provided with water from other sources, it would to that extent modify the calculation.

Under the circumstances which now obtain, it is evident that Boston cannot depend on the waters of the Mystic valley for any permanent addition to her present supply; but an important temporary addition to her present supply may be obtained here.

This could not be got, however, without the aid of storage reservoirs, and it would take two seasons diligently employed to construct these.

By this means there might be applied in 1876 seven or eight millions gallons towards the supply of the city proper, and seven millions at least of this amount could be continued to 1880, when, if the works contemplated elsewhere are completed, it would be no longer needed. After 1882 the amount might begin to be encroached upon by the requirements of the district now using this water.

The estimated costs of the storage basins required to apply the waters of the Mystic basin are as follows: —

Storage basin No. 1	$90,976 00
“ “ No. 2	167,966 00
“ “ No. 3, being the application of Horn Pond to secure the drainage waters below Nos. 1 and 2, and within the control of Horn Pond	8,500 00
“ basin No. 4	642,120 00
“ “ No. 5, constructed by Winchester Water Works	0 00
“ basin No. 6	85,000 00
	$994,562 00

The construction first of No. 2 and No. 4, with a joint capacity of 199,738,620 cubic feet, say 200,000,000 cubic feet, would admit of the application of 5,000,000 gallons per diem to begin with, and as this amount, with the aid of Cambridge, may be sufficient to meet the requirements of the city until the Sudbury works are available, we shall first give an approximate estimate of the cost attending the introduction of this quantity: —

Cost of Storage basin No. 2		$167,966 00
“ “ “ No. 4		642,120 00
Pumping engines and engine-house at Charlestown, delivering into the Charlestown reservoir:		
Foundations of engines, engine-house, boiler-house and chimney .	$45,000	
Engine-house, boiler-house and chimney	40,000	
Amounts carried forward,	$85,000	$810,086 00

Amounts brought forward,	$85,000	$810,086 00
Two pumping-engines, each with capacity to deliver 5,000,000 gallons in 24 hours	150,000	
		235,000 00
3,300 cubic feet of 30-inch force main		37,000 00
Pipe connecting the reservoir with the existing distribution-pipe of Boston, 20,520 feet of 30-inch pipe		215,460 00
1,440 feet of patent ball and socket 30-inch pipe across Charles River, including dredging		84,000 00
Check-valve and stop-cocks		12,000 00
Work connecting with the reservoir		15,000 00
		$1,408,546 00

The lift at Charlestown, including the friction of the pipe, may be taken at 153 feet.

The cost of delivering 1,000,000 gallons 100 feet high, including fuel, oil, etc., attendance and ordinary repairs, is found to average, for good engines, about $12.00; equal for 153 feet to $18.36 per million gallons.

This, for 5,000,000 gallons, would give an expenditure of $91.80 per diem.

To deliver 5,000,000 gallons daily from the Mystic basin would thus involve an expenditure of say $1,400,000, and the cost of pumping this amount into the Charlestown reservoir would be about $92.00 daily.

It is to be noted that this expenditure for reservoirs and pumping-engines would not be thrown away, after the city of Boston ceased to require the water, inasmuch as such storage reservoirs and power will be needed for the population of the valley, but much of this outlay would be for a while in advance of the needs of that population.

The cost of this water to the city, allowing 7 per cent. for the capital invested, and including the expenses at the engine-house, would be 7¼ cents per thousand gallons; including superintendence at the reservoirs and repairs, it might reach 8 cents per thousand gallons, delivered; a rate which for such special service cannot be deemed unreasonable.

Having endeavored to understand the condition and resources of the Mystic valley as regards quantity of water, we come now to its condition as regards purity.

The natural waters of the Mystic valley are, as might be expected from the geological features of the basin, very pure and colorless; but the tanneries and other manufactories situated at and in the neighborhood of Woburn affect more or less the color of the main stream, and measurably its purity. When we visited the ground, the water of Russell's brook, which receives the refuse of ten of the tanneries, was exceedingly nauseous to the smell and taste.

The report of Professor Horsford will give the chemical properties minutely of the Mystic waters. We will mention here, however, the principal prejudicial influences to which it is subject.

These are the different manufactories referred to, and the sewerage of the towns of Woburn and Winchester.

The sewerage of these thriving places has not yet taken a concentrated shape, but, with the introduction of water, this will speedily follow. If this sewerage is intercepted and delivered into the river below the Mystic lakes, it will relieve the stream from so much pollution, but as the cost of effecting this would be considerable, it is not likely to be carried out very soon.

The manufactories alluded to number as follows: —

Tanneries	20
Wool-scouring Establishments	1
Morocco Factory	1
Glue Factories	2

Chemical Works	1
Pig-Slaughtering House	1
Piggery (200 heads)	1
	27

The tanneries cure, on an average, 1,200 hides and 525 calf or alligator skins daily, — say equal to 1,300 hides daily. Each hide is variously estimated to use from 450 to 200 gallons of water during the process of curing. Take the lowest figure, and it gives 260,000 gallons of very impure water passing into the river daily. If it is considered that during a season of very low water, the river, judging from the area of its basin, may be flowing then less than 4,000,000 gallons daily, the introduction of this amount of very objectionable water could hardly fail to be perceptible between Russell's brook and the Mystic lake. Its passage, however, through the large body of water in the upper Mystic pond, admits of such a diffusion as to render such impurities entirely imperceptible to our senses at the lower end of the pond, where the Charlestown works have their conduit connection. When the river is in flood the relative proportions of pure and impure water would be entirely changed, obliterating, for the time, all trace of the latter.

Notwithstanding all this, the impurity is of a character that it is very desirable to be rid of it; and it is growing continually with the growth of Woburn, Winchester and their neighborhood.

We have had estimates made accordingly for a sewer sufficiently large to receive the refuse waters of all these establishments and convey them to tide-water. This would require 8.68 miles of sewers of various diameters at an aggregate cost of $264,000.

To purify the refuse waters from tanneries, irrigation has been tried, but, so far as we can ascertain, unsuccessfully both here and in England. Mixed with sewage, it is supposed that it might be made available in this way where the circumstances otherwise admitted of such an application economically. We cannot learn that any process has been used to destroy the impure elements in the refuse water of tanneries, although such a process is hinted at in one of the English reports on the pollution of rivers.

Your instructions require of us an expression of opinion in regard to "the changes needed to prevent any waste of the present supply."

The average daily consumption of water in the city for the years 1869 to 1872 show that much has been already done towards the reduction of this evil, since the natural increase in the consumption due to the growth of the population and its business does not appear here.

The rate per diem is reported as follows : —

1869	15,070,400
1870	15,007,700
1871	13,945,500
1872	15,063,400
1873	17,896,000

There are here four years when the consumption of water did not increase ; in 1871 it was, in fact, reduced by a little over 1,000,000 gallons per diem, and in 1872 would probably have stood below the consumption of 1869, had not the great fire occurred to increase somewhat its natural proportion. In 1873 the rate of consumption rises again, showing either that the waste had been finally subdued as far as the officials had power to subdue it, or that their efforts that way had been to some extent interrupted.

The waste of water may be referred to three general heads : —

1. Leakage in the street pipes and mains.
2. Leakage within the houses from imperfect or improper fittings.

3. Waste within the houses during the winter months from allowing water to run off during the night to prevent freezing of the pipes.

The first cause of waste can never be entirely corrected, but it is being continually reduced as such leaks become known, either by their exhibition in the sewers or otherwise.

Towards the correction of the second cause there should exist a discreet but efficient water police, having the right, at reasonable hours, to examine all the fittings, systematically, of all the premises in the city, and to advise, as well as report, when these are defective. To render such action efficient, the Water Board must have power, where due notice or advice is not respected, to cut off the water until the proper correction is made. They should, in other words, have ample power to correct the causes of waste wherever they appear, and to take such steps as the circumstances require to ascertain them.

The third cause — of waste growing out of our severe winters and the bursting of service-pipes by frost — is not so easily dealt with. Until the service-pipe can be efficiently protected from this contingency, the servants of any house can hardly be condemned for taking the only measures they know of to avoid it. The Board, after showing how this protection can be given, should have power to insist upon its application, and to charge for its non-application according to the amount of water they judge to be wasted.

We see no means, then, of reducing the waste to its narrowest limits, for it can never be entirely suppressed, except by investing those in charge of the water supply with ample powers towards that end, — such powers as, in their experience, they may find to be necessary in addition to those already possessed by them. As it is an exceedingly delicate and thankless task to carry out the measures necessary to correct the losses alluded to, the officers in charge will, we should think, be more likely to use their powers moderately than to exceed them.

CONDUIT OF COCHITUATE WATER WORKS.

An examination of the interior of the brick conduit was made November 19th and 20th last, by persons who walked through its whole length, a report of which is annexed.

Some parts were found to be in very dangerous condition.

The conduit is built of a single thickness (eight inches) of brick, supported on the bottom and sides by earth, which appears to have yielded in many places, causing numerous cracks in the brick-work, generally at the top and bottom of the conduit.

By reference to the annual reports of the Cochituate Water Board and accompanying documents, we find that fine cracks of the same character "were discovered before and about the time the aqueduct was completed."

Within a few years after the water was admitted, repairs were made by pointing up the cracks, and in some cases cutting out brick-work and relaying it.

The cracks have continued to reopen, or others to appear, making frequent repairs necessary.

This operation, repeated at the same place, has resulted in considerable changes in the original form, reducing the height and increasing the width. Measurements made during the recent examination show an increase of width in many places of from one to three inches, and in one place of nearly six inches, and a diminution in the height, but of less amount.

We find, from the same reports, that the depth of water in the conduit was not originally expected to exceed about four feet, or about two-thirds of the height of the conduit, but the demands for water have made it necessary to run a great part of it nearly or quite full for many years, and frequently under a head of several inches in addition. The greater pressure resulting from this use has undoubtedly increased materially the trouble, but the fact mentioned above, that cracks began to appear before any water was admitted, indicates that they are not wholly due to the pressure of the water.

The demands of the city for water have been such that the flow through the conduit could be interrupted only for short periods, which must frequently have prevented the repairs being made in the thorough manner they would otherwise have been.

This opening of cracks in the brick-work and imperfect repairs, frequently repeated at the same places, during the last twenty years, must have deteriorated the work and rendered it more liable to rupture from the excessive pressure to which it is now exposed.

The recent examination has shown, very clearly, that parts of the conduit are now unsafe, and may fail at any time. With the increasing population to be supplied, the demands for water must also increase, which, until other sources of supply are provided, will be likely to lead to forcing more water through the conduit, and increase the liability to breaks.

We are of opinion that arrangements should be made, as soon as practicable, for the thorough repair of the parts of the conduit that are in a dangerous condition, and also to limit the quantity of water passing through it to about seventeen millions of gallons per day, which we think is all that it will carry without having a head on some parts of the line. With the increasing population, this will require either increased economy in the use of the water or an immediate additional supply from some other source.

FLAX POND.

In your communication of the 25th Nov. last, you state that it is the desire of the Water Board that, in connection with our report upon the Mystic basin as a source of supply for Boston, we should also consider and report upon the Flax pond basin in Lynn; whether in our opinion "the quantity of water to be derived from the latter would warrant the expense of connecting it with Mystic lake, or the pump well, making it supplementary to the Mystic supply."

An examination of this pond, together with Sluice and Cedar ponds, its tributaries, was made by Mr. William J. McAlpine, as sources of supply to the city of Lynn, the results of which are contained in his report to the authorities of Lynn, dated August 1st, 1870.

From this report we gather that the water-shed is 2.48 square miles, which can be extended by catch-water drains to about three square miles; and by using the three ponds to the depth of eight feet as storage reservoirs, it was estimated they would furnish an average daily supply of three million gallons.

Mr. George R. Baldwin, in 1850, examined Sluice pond as a source of supply to the city of Salem; and from a copy of his report shown us, we gather that, relying on a water-shed of 4,200 acres, or 6.56 square miles, "judging of its capacity by the topography of the plan of Lynn," he estimated that it would furnish an average daily supply of 5,356,000 gallons.

We have had no opportunity of verifying either of these estimates by actual surveys, but it is obvious that Mr. McAlpine had much the best means of estimating the supply, the water-shed having been minutely surveyed for the purpose; and we are of opinion that his estimate of an average daily supply of three million gallons is fully as large as the circumstances warrant, and that in a dry year it will probably fall considerably below that quantity.

In order to deliver the water gathered from the water-shed, as a uniform daily supply, it is necessary, as Mr. McAlpine contemplated, to provide a large amount of storage. Sluice and Cedar ponds, as we are informed, can easily be converted into storage reservoirs. Flax pond, near its outlet, is within the populated part of Lynn, and we are informed, building is rapidly extending round its margin. The level of the ground for a considerable distance near the outlet is but a few feet above the usual height of the water, and if its level is raised materially, a dike of considerable length must be built on the margin. Raising the level of the water above the level of the ground, on which houses in the vicinity are already built, will undoubtedly be considered an injury to the value of the property, and possibly to health. We think it would be less objectionable, to get the required storage in this pond by drawing it below its usual height. The ground near the outlet will allow the effluent pipe to be laid low enough to permit the water to flow out, by gravity, to the required depth. When the pond is drawn down, a certain area of flats will be laid bare, which in the hot weather we think may be offensive to the neighborhood, and perhaps be deemed injurious to health. This objection applies also to the plan of raising the level of the pond.

Between Sluice and Flax ponds there is a dam and mill, now used for pulling wool and tanning sheep-skins, and a large amount of polluted water passes from these works into Flax pond, which it would be necessary to discontinue. The natural drainage from the houses, etc., on the margin of Flax pond, is into the pond. If the water is to be used for domestic purposes, a system of sewerage must be provided to divert it.

The cost of conveying the water of Flax pond to the pump-well of the Charlestown works, a distance of eleven and a quarter miles, together with the additional cost of pumping engines and mains to deliver the water in Boston, is estimated at $1,327,847, which, in addition to the cost of the works, is intended to cover the probable amount of damages to be paid for diverting the water and otherwise, which is necessarily very uncertain.

On account of the great cost for the quantity of water to be obtained, together with the probability that the use of Flax pond as a storage reservoir may be objected to on the ground of its effect on health, we are of opinion that it would not be advisable to connect it with Mystic lake or the pump-well as a supplementary source of supply for Boston.

It may be well to recapitulate here the results of our examinations on the points referred to us.

First.—Quantity. The quantity of water which can be relied on from the "Mystic pond," by which we mean the Mystic valley, during a season of drought, and with the aid of storage reservoirs, will not, in our opinion, exceed a daily average of seventeen millions gallons, unless the lower Mystic pond is utilized, when it might probably reach an average of eighteen millions gallons daily.

The population now depending on this water will, it is calculated, number 269,000 souls in 1900, and will by 1898 or 1899 require all the water that the valley can furnish during a year of drought. The City of Boston cannot, therefore, rely on this basin as a source of supply, except temporarily. Until 1880 there can be drawn from this valley by means of the construction of two of the indicated storage reservoirs, a supplementary supply of 5,000,000 gallons daily, at a cost delivered, as we estimate it, of eight cents per 1,000 gallons.

By constructing all the storage reservoirs mentioned in this report, the amount might be increased to seven or eight millions gallons daily; but we have not carried out this estimate, assuming that the supply of 5,000,000 gallons daily might perhaps meet the immediate necessities of the case with the aid of what can be got from the Cambridge Water works, and that the other storage reservoirs could be added from time to time as they may be needed. It is to be noted that the Charlestown Works will feel the need of a storage reservoir, in all probability, before either of the two above alluded to can be constructed; this has been foreseen, and their capacities will meet, as well the varying requirements of the Charlestown works.

Second. — Purity. The Mystic river, before it enters the Mystic pond receives the refuse waters of certain tanneries and glue factories, elsewhere enumerated, which, judging by their effect on the Russell's brook, — one of its lesser tributaries, — are of a very impure and objectionable character.

The river may be further contaminated, by and by, by the sewage from the towns of Woburn and Winchester, when the construction of sewerage works at these places shall collect and concentrate it. Both of these descriptions of impurity are very objectionable contributions to a river water, but we do not think that they are likely to be for some time perceptible, after passing through the deep waters of the Mystic pond, nor that they are sufficient to render the water drawn from that pond for Charlestown and other places, in any sense, unfit now for domestic use.

They can all be intercepted and carried to tide-water whenever, either from their increased quantity or a greater sensitiveness on the part of the water consumers, this course may become desirable.

Third. — The Cochituate Conduit. This conduit is overtaxed now, and shows in many places signs of weakness and yielding, the most dangerous of which should, we think, be repaired and made safe next spring. The conduit cannot be thoroughly overhauled and repaired until an independent supply of water is available for the city from other sources, sufficient to admit of the Cochituate conduit being relieved from duty for some months. Until such an opportunity can be had, we are of opinion that it should not, in its present condition, be relied on to convey more than 17,000,000 gallons in any one day.

Fourth. — Waste of water. To reduce this waste to its minimum and hold it in check, greater power, in our opinion, should be conferred on the Water Board, to enable them to require the correction, under penalties, of insufficient fittings within the premises of water-takers; to ascertain by frequent examination where these exist, and to prescribe the classes of service-pipes, and all kinds of fittings which are best calculated to defend the city against that needless waste which is known to exist, and which seems to be less under check here, than in any other of our large cities.

Fifth. — Flax pond. The addition of the water of Flax pond to your supply appears to us inadvisable, both on account of its relative cost, and of the difficulties which would probably arise in its application.

Which is respectfully submitted.

JAMES P. KIRKWOOD,
JAMES B. FRANCIS.

APPENDIX.

APPENDIX.

Boston, November 20th, 1873.

James P. Kirkwood, Esq.,
James B. Francis, Esq.,

Gentlemen,—According to directions received I have just made an examination of the Cochituate Conduit by walking through from the lake to the Chestnut Hill Reservoir, in company with Mr. Joseph Wiggin, Clerk of the Water Board, and Mr. D. Fitz Gerald, Superintendent of the Western Division; and have to report as follows: —

November 19. Entered the Conduit at Lake Cochituate at 9 A. M.

Station 12. From lake to this point considerable vegetable growth of a substance resembling sponge and a sort of black moss.

Station 13. Sides well covered with black moss.

Station 17½. Bottom apparently three inches below grade for about 25 feet.

Station 26. Bottom appears to be about three inches above grade for a short distance. Measure 6.28 x 5. 1.*

Station 122. Water springs in at bottom bringing fine sand.

141 to 142½, near Stevens' brook. Crack in top ⅛ to ¼ inch wide, probably new, sand in bottom. Size 6.3 x 5.13.

152 to 153. Slight crack in top.

154 to 155.20. Cracks in top and bottom. Size 6.33 x 5.13.

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* The size of the conduit as built, is, height 6.33 ft. width 5 feet.

Dedman's Brook.

Arrived 11.45; came out; 1 P. M. re-entered.

156 to 158.50. Slight crack in top, an old one, no change Size 6.3 x 5.04.

Station 167.50. Crack in top ¼ inch wide and about ten feet long. An old one. Size 6.4 x 5.17.

Station 178 to 181. Paddock's Pond. Old crack in top about ⅛ inch wide.

Station 207 to 208.20. Slight crack in top. Size 6.3 x 5.12.

245 to 246. Old crack in top ⅛ inch wide. Size 6.3 x 5.17.

248½ to 249. Old crack in top, no change. Size 6.3 x by 5.12.

252.50. Slight crack on top.

253 to 254. Embankment. Quantities of roots, some as large as my little finger, growing into and apparently through joints, also a small crack on top.

254. Size 6.25 x 5.22.

255 to 256. Embankment, wide crack in top and bottom.

262½ to 264. Slight crack in top. Size 6.28 x 5.27.

272 to 274½. Embankment, old crack in top, quite wide, appears not to have started since last year. Size 6.26 x 5.13.

283½ to 284. Slight crack in top, an old one.

284½ to 285½. Slight crack in top, left hand. Size 6.24 x 5.12.

300. Measures 6.16 x 5.13. *End of Division 1.*

DIVISION NO. 2.

Station 13 to 14. Old crack in top, pointed and cracked again. Size 6.14 x 5.21.

13½. Large spring of water in bottom.

15½ to 17. Old crack in top, quite wide, pointed and started again. Size 6.12 x 5.17.

17 to 18. Old crack in top quite large, has been pointed and started again; water springs in at bottom, size 6.11 x 5.15.

Station 30½. Mud and roots in bottom.

Station 49½. *Grantville Waste Wier* arrived at 4.10 P.M., left at 4.15.

52 to 54½. Slight crack in top.

63½ to 64½. Slight crack in top, size 6.3 x 5.05.

77 to 78. Several cracks.

107 to 109½. *Lower Falls, high embankment:* Bad cracks along top and bottom; very wide in many places; have been pointed and started again; conduit badly out of shape, a probe was pushed through bottom crack and two feet into the gravel below; size 6.18 x 5.30.

108. Worst place, wide cracks top and bottom; is in a very dangerous condition, size 6.0 x 5.48.

111½. Pipe chamber, Newton Lower Falls, arrived at 5¼ P.M.

Charles River Crossing.

November 20. Re-entered at East Pipe Chamber 10.20 A.M., about Station 122.

Station 160. Crack in top 50 feet long, both sides of a man-hole.

169¼ to 170. Slight crack in top, size 6.37 x 5.08.

178½ to 179. Slight crack in top; roots growing into sides; size 6.33 x 5.07.

195½ to 196½. Slight crack in top, size 6.35 x 5.03.

216¼ to 218¼. Several bad cracks in different joints, left hand, top and bottom, ⅛ to ¼ inch wide, size 6.31 x 5.06; at 218, size 6.28 x 5.06.

223½ to 224. Slight crack in top.

224 to 225. Several large cracks in top, left hand, and one in bottom, probably new ones; size 6.26 x 5.13.

226¾ to 228½. Slight cracks in top.

232½ to 238½. Bad cracks top and bottom, ¼ inch wide, and a crack in bottom on south side, size 6.28 x 5.14.

242.60 to 244. Near a man-hole and in embankment; two of the worst cracks we have seen in the top, and also two bad ones in bottom, ¼ to ½ inch wide, large roots growing in at top; size 6.21 x 5.21.

247½ to 248. Very slight cracks in top.

253½ to 254½. Slight crack in top, size 6.30 x 5.15.

263½ to 264¼. Cracks in top and bottom, size 6.27 x 5.11.

Division No. 3.

1 to 2½. Slight crack in top, size 6.29 x 5.06.

6¾ to 7. Small crack in top.

Station 9. Waste-Weir Newton Centre, arrived at 1 o'clock 5 minutes.

11½ to 12½. Very slight crack in top.

19½ to 20. " " " "

21 to 21¼. " " " "

22. Size 6.26 x 5.13.

33½. Old brick and cement dam 5 or 6 inches high.

35½. Another dam and rubbish in bottom.

37½. Copious spring in bottom, smells of sulphur.

39. Roots and springs.

50½ to 52½. Cracks in top and bottom ⅛ to ¼ inch wide.

51. Hole in bottom, spring of water.

51½. Size 6.20 x 5.10.

52. Crack in bottom, on right, size 6.25x5.20.

Newton Tunnel,

West End, nine inches of mud, and through whole length from three to six inches of mud.

Ventilator; arrived at 2.10, left at 2.30.

86½ to 87½. Quite a crack on right near top; also one in bottom.

89 to 89.30. Crack in middle, top, and bottom.

90 to 90½. Crack ⅛ to ¼ inch right side, size 6.4 x 5.12.

94. Slight crack, right, near top.

107½ to 108. Slight crack in top.

109 to 110. Two cracks at right of top ⅛ inch, size 6.31 x 5.05.

115½ to 116¾. Slight crack in top.

117¾ to 118½. Two slight cracks in top.

118¾ to 119¼. Slight crack in top.

119½ to 124. Bad cracks, top and bottom, ¼ inch and over.

121. Size 6.20 x 5.27.

122. Size 6.24 x 5.22; all along this portion bottom is rough, remains of old cement dams.

125. Old crack, has been pointed, not visibly started.

125½ to 126. Small crack top, size 6.3 x 5.15.

127. Small crack in top.

Chestnut Hill Reservoir, just above intermediate Gate Chamber, new conduit, cement-lined all through, has a slight crack along the top.

Finished examinations at 4 P.M.

Respectfully submitted,

DAVID W. CUNNINGHAM,

First Assistant Engineer — New Supply.

REPORT

OF

PROF. E. N. HORSFORD,

UPON THE

PURITY OF THE MYSTIC WATER.

1873.

REPORT ON THE PURITY OF THE MYSTIC WATER.

JOHN A. HAVEN, ESQ.,

President of the Cochituate Water Board:—

SIR, — At the request of your Board I undertook, about the 1st of November last, the examination of the waters of the basin of the Upper Mystic, with a view to determining the present and prospective fitness of the Mystic Pond water for domestic use.

Previous labors had made me somewhat familiar with the region, but it seemed desirable to examine the ground anew, and with your Superintendent, Mr. Stanwood, I made at once a comprehensive survey of the streams and ponds, and the factories embraced in the water-shed; and soon after caused to be collected such samples of water and deposits as promised to enable chemistry to answer the questions propounded. These waters and deposits have been analyzed, and I respectfully submit the results of analysis and the inferences that seem to flow from them.

The present salubrity of the water of the Upper Mystic may be accepted as having been settled by the experience of the cities which have used it for some seven years. If there be any doubt upon this point, the following analyses will serve to give to the distrust the measure of consideration to which it is fairly entitled.

There was contained in one gallon

			Inorganic.	Organic.	Total.
Of Croton,	in	1845,	6.66	4.28	10.93
" Fresh pond,	"	1873,	5.67	2.36	8.03
" Mystic,	"	1873,	3.78	2.83	6.61
" Cochituate,	"	1873,	3.12	1.24	4.36

The *prospective* fitness, for domestic use, of the water of the Upper Mystic pond involves two kinds of considerations.

1st. Is it liable, as some other waters are, to acquire greater or less increase of its inorganic matters? and

2d. Is it liable, for reasons peculiar to itself, to acquire increased proportions of *organic matters* as well as inorganic matters?

The increase of lime and magnesia salts tends to make a water hard. The increase of soda or potash salts produces no harm except the quantity be very great. Increase of organic matter may bring with it objectionable qualities, both for boiler use and in regard to salubrity.

The first analysis of Cochituate water in 1845 gave in one gallon,

Inorganic matter	1.22 grains.
Organic "	0.63 "
Total	1.85 "

An analysis in the course of this investigation, in 1873, gave of

Inorganic matter	3.12 grains.
Organic "	1.24 "
Total	4.36 "

This increase is very considerable, although the water is undoubtedly one of the purest supplied to any large city. Moreover, the past history of the water shows that it is liable to considerable fluctuations.

The first analysis of Fresh pond water, made in 1853, gave per gallon,

Of Inorganic matter . . .	5.01 grains.
" Organic "	1.35 "
Total	6.36 "

It now, Dec. 20, 1873, contains,

Of Inorganic matter . . .	5.67 grains.
" Organic " . . .	2.36 "
Total	8.03 "

The water of the Schuylkill gave,

In 1842		4.10 grains.
" 1845, Inorganic matter . . .	4.26	
Organic " . . .	1.24	
Total	5.50	5.50 "
In 1854		6.11 "

The surface of the Mystic contained,

In 1836,	Total residue per gallon,	1.17 grains.
" 1845,	" " " "	2.33 "
" 1859,	" " " "	4.08 "
" 1860, October,	" " " "	7.67 "
" 1862 (Silliman),	" " " "	9.58 "
" 1872, November,	" " " "	5.30 "
" 1873, November,	" " " "	6.61 "

The occasional increase in the amount of mineral matter in the waters of Lake Cochituate, as compared with that at the time this water was first introduced for the supply of Boston, is an interesting fact.

Possibly the following explanation is adequate in part to account for the oscillation.

When the water of Lake Cochituate was analyzed in 1845, the lake had been standing at, or near, its normal level for ages. The soil, for a considerable distance from its shores, contained in solution the usual constituents of arable soils in primitive regions. Of these, a portion were in solution.

Within certain average limits these constituents remained unchanged, and oscillated between certain higher and lower levels in the soil, under the influence of evaporation on the one hand, and alternating accessions of rain water on the other.

But when occasion required the drawing down of the water considerably below the mean level, the water of the surrounding soil, with whatever it held in solution, naturally flowed into the lake. Every oscillation of level repeated this process.

The wants of the city of Boston have repeatedly provided this occasion for an influx of saline matter into the pond.

The accession of the water of Sudbury river for a time seemed to increase the foreign matter. But I am disposed to look upon the present analysis as giving an exceptional result, and that the substantial purity of the water for all time is assured. A year ago the water was nearly as pure as it was in 1845, as the following figures show: —

Total residue in 1845	1.85 grains.
" " " 1872	2.06 "

The present level of Fresh pond is much below — several feet below — its natural outlet, and it seems possible that the same phenomenon as that occurring at Lake Cochituate is being repeated in this sheet of water, with the probability that the water displaced by rainfalls from the surrounding marshes contains more saline matter to be forced into the pond. The stratum of salt water below, brought in by high tides in times long gone by, is doubtless diffusing itself with a relatively increased rapidity as the outflow of surface water over the dam is cut off.

The increase in the amount of inorganic matters in the Schuylkill finds explanation in the increased cultivation of the land on the shores of the tributaries, and in the burning of wood to ashes in clearing new land from 1842 to 1854, and, perhaps, to the sulphur of the iron pyrites brought to the surface in the coal, and oxidizing spontaneously or burned in the manufacturing industries.

In more recent times, the increase of manufactures in the towns on and near the banks of the river and its tributaries have appreciably lessened the purity of the water. But I have at hand no recent analysis of the water to enable me to judge.

The opinion of Booth and Boye, of Philadelphia, after a careful analysis of the Schuylkill water, following an interval of twelve years, in 1854, is that the development of manufactures on the tributaries to the Schuylkill had not in that time deteriorated the water in the quantity of *organic matter* in the *slightest degree*, though the inorganic matter had been slightly increased. In the judgment of these gentlemen the water had "deteriorated in no important respect from its former excellent quality."

The Croton reservoirs have been recently enormously enlarged, introducing large volumes of water from more interior drainage, so that the comparison of earlier and later analyses has no particular significance in its bearing upon the point in consideration.

The low marginal territory of the Upper Mystic is less extensive than that of Fresh pond, and the occasions of its being drawn down have been fewer. Practically speaking, there is little if any marsh land saturated with sea-water about Mystic pond.

Let us place side by side the analyses of the waters made at or near the time of their introduction for aqueduct use, with those of more recent date : —

		Total to one gallon.		Total to one gallon.	Increase in years.
Schuylkill,	1843,	4.10 ;	1854,	6.11 ;	2.00 in 12
Fresh Pond,	1853,	6.36 ;	1873,	8.03 ;	1.67 in 20
					Decrease.
Mystic,	1860,	7.67 ;	1873,	6.61 ;	1.06 in 13

This exhibit is, at least, not prejudicial to the good repute of the Mystic water. It had, in 1860, of inorganic, 5.46; organic, 2.20; 1870, inorganic, 3.78; organic, 2.83.

What is the real significance of an accession of inorganic salts?

This topic has received a large amount of attention, in England, more especially. It is an interesting fact, the result of experience and observation, that the rates of mortality are not in the proportion of foreign inorganic matters present in town supplies of water, but in the ratio of their *absence*. That is, the nearer a water approaches absolute purity inside a certain normal limit, the *less* suited is it to meet the demands of the ordinary organism.

It used to be believed that a hard water — that is, a water which, on account of its hardness, was less serviceable for laundry purposes — was less healthful. But Dr. Letheby, of London, has made a collection of the death-rates of a large number of towns supplied by aqueducts, and placed these rates in a table side by side with the degrees of hardness of the water (the measures of salts of lime and magnesia) supplied to the several towns, and the result shows that the death rates rise with the increased purity of the water.

The degrees of hardness in the following table are relative, — based on the curdling produced in the water by the addition of graduated solutions of soap in alcohol: —

Table showing Hardness of the Water Supply and the Death-Rates.

Hardness.	No. of Towns.	Average death-rate per 1,000.	Average hardness.
Over 10°	25	21.9	16.
10° to 6°	17	24.9	8.
6° to 2°	15	26.3	3.8
2° and under	8	28.5	1.3

Now, while it would doubtless be well to act with caution in applying the obvious deduction from this table, it may serve to relieve us of special solicitude in regard to moderate accessions of inorganic matter to the remarkably soft waters of our primitive district.

It may be remarked that the lime salts which make water hard serve in the formation of bones. Wheat, from which most of our bread is produced, contains an abundance of phosphate of potash, but rarely more than a trace of phosphate of lime. The juices of flesh contain large measures of phosphate of potash with relatively little of phosphate of lime. The deficiency in the food is made up in part by the lime derived from the drinking water.

It is obvious upon a glance at the foregoing that, so far as general *natural* agencies are concerned, the future of the upper Mystic pond water may be contemplated without solicitude. There is nothing in the way of organic or inorganic matter likely to be seriously increased from any natural condition of the basin.

There is, however, the second kind of consideration, which grows out of the presence on the tributaries to Mystic pond of numerous manufacturing establishments connected with the treatment of the hides of animals, in the washing, dressing and tanning of which large quantities of water are used, and then turned with more or less of care, or with no care, in regard to settling or purification, into the streams leading to the pond. Besides these there is an establishment for refining glue stock; and a glue factory hitherto in operation in one part of the basin is about to be removed to another. It is in view of these establishments, and the prospective domestic sewage of a growing population, that the future salubrity of the water is thought to be endangered.

The main channels through which the Mystic basin finds its outlet are Cummings' brook, Kendall's brook, Russell's brook, and the lesser tributaries to Horn pond and Wedge pond on the west, and the Abajonna with its tributaries on the east.

It has been deemed desirable to ascertain what has been, and what is now, the effect of the more important factories upon the excellence of the water. The collections of water have been made at points immediately above and below these works, as well as at points nearer the sources of the tributaries, and at various depths in the upper Mystic pond. Besides these, numerous deposits from the bottoms of the streams near factories, and at various distances from them, to determine the extent to which the deposits are carried, have been collected, and, with the waters, have been analyzed.

The analytical results are presented in the two following tables: —

TABLE I.

No. of Sample.	Locality.	Deposit.	Color.	Taste.	Smell.	Reaction.	Inorganic Salts.	Organic driven out by heat.	Total.	General Remarks.
No. 0	Drain from Moseley's tannery.	One half the volume a deposit of reddish brown leather powder and carbonate of lime.	Dark red.	Of salt and lea.	Offensive.	Neutral.	252.63	64.10	316.73	Carb. and Nit. in residue from evaporation.
No. 1	Abajonna, immediately above Moseley's tannery.	No deposit.	Colorless and clear.	Tasteless.	Inodorous.	Very faintly acid.	4.70	3.76	8.46	
No. 2	Russell's Brook, south of Main street.	Flocculent deposit, trace in suspension.	Faintly brownish.	Tasteless or slightly sw'py	Inodorous.	Faintly acid.	16.96	6.59	23.59	Nitrates.
No. 3	Russell's Brook, north of Main street, above Crane's tannery.	Flocculi suspended and deposited.	Brown shade.	Slightly of sw'p water.	Inodorous.	Neutral.	14.13	5.65	19.78	Nitrates.
No. 4	Small tributary of Horn Pond, north of Pleasant street.	No deposit.	Perfectly clear.	Tasteless.	Inodorous.	Very faintly acid.	7.53	4.70	12.23	
No. 5	Same stream as No. 4, below all the tanneries near the mouth.	No deposit.	Clear.	Tasteless.	Inodorous.	Neutral.	7.53	6.59	14.12	
No. 6	Larger tributary to Horn Pond, near its mouth and below all the tanneries.	No deposit.	Perfectly clear.	Tasteless.	Inodorous.	Faintly acid.	4.70	1.41	6.11	
No. 7	Kendall's Brook, below pond and piggery.	No deposit.	Perfectly clear.	Tasteless.	Inodorous.	Neutral.	Not determined	. . . .	1.25	
No. 8	Below Glue Factory and Cumming's tannery.	Brown flocculi in suspension and deposited.	Filtered clear.	Tasteless.	Inodorous.	Faintly acid.	10.36	6.59	16.95	
No. 9	Above Glue Factory, outlet of pond above Cumming's tannery.	White flocculi, products of beaming hides in suspension. Slight deposit.	Filtered clear.	Tasteless.	Offensive to smell.	Faintiy acid.	15.08	5.65	20.73	Carb.

No. 10	Below Bishop's Extract tannery, above S. Bedford street.	Slight flocculent deposit.	Amber color.	Tasteless.	Inodorous.	Acid.	9.42	6.59	16.01	Nitrates.
No. 11	Brook above Bishop's tannery and the ponds.	No deposit.	Pale amber.	Taste of swamp water.	Inodorous.	Slightly acid.	3.76	7.53	11.29	
No. 12	Outlet of Burbank's Pond above Frye & Thompson's.	No deposit.	Pale amber.	Slight swampy taste.	Inodorous.	Faintly acid.	2.82	2.82	5.64	
No. 13	Surface of sluice water below Baeder, Adams & Co.'s Glue Stock factory.	Flocculent deposit.	Filtered perfectly clear.	Tasteless.	Faint odor of glue.	Neutral.	9.42	3.76	13.18	
No. 14	Under current of No. 13.	One-eighth a voluminous deposit.	Filtered clear.	Faint taste of glue.	Faint odor of decaying glue	Slightly acid.	8.47	7.53	16.00	
No. 15	Stoneham Brook supplying B. & A.'s Glue Stock works.	No deposit.	Perfectly clear.	Tasteless.	Inodorous.	Acid.	5.16	1.88	7.04	
No. 16	Second Race-way drain from works on the south side of brook.	Slight flocculi in suspension.	Filtered clear.	Tasteless.	Inodorous.	Slightly acid.	10.36	3.76	14.12	
No. 17	Abajonna River, 200 ft. below junction of brook and meadow receiving drainage from Glue Stock factory.	No deposit.	Brownish amber color.	Tasteless.	Inodorous.	Faintly acid.	6.14	5.16	11.30	
No. 18	Abajonna, at Stoneham Branch R. R. bridge.	No deposit.	Faint amber.	Tasteless.	Inodorous.	Neutral.	5.65	0.93	6.58	
No. 19	Junction of Wedge Pond, below Bailey's Wool Washing works.	No deposit.	Perfectly clear.	Tasteless.	Inodorous.	Very faint acid.	6.81	1.51	8.32	
No. 20	Marshy Pond below Moseley's tannery	Slight flocculent deposit.	Pale amber.	Slight swamp water taste.	Inodorous.	Very faintly acid.	3.76	2.82	6.58	
No. 21	Outlet of Wedge Pond west side of Woburn Branch R.R.	Slight brown flocculent deposit.	Pale amber.	Tasteless.	Inodorous.	Neutral.	6.59	2.82	9.41	
No. 22	Winchester Pond, west side of B. & L. & N. R. R., archway under bridge.	Slight deposit.	Pale amber.	Tasteless.	Inodorous.	Faint acid.	4.70	2.82	7.52	
No. 23	Abajonna, above Waldemayer's tannery	Slight deposit.	Clear.	Faint taste of swamp water.	Inodorous.	Very faintly acid.	4.70	4.70	9.40	
No. 24	Below Waldemayer's tannery.	Slight deposit.	Slight amber tint.	Faint taste of swamp water.	Inodorous.	Slightly acid.	5.65	1.88	7.53	
No. 25	Surface of Mystic Pond. Sample lost.									
No. 26	Surface of Mystic Pond.	No deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	3.78	2.83	6.61	

TABLE I. — *Continued.*

No. of Sample.	Locality.	Deposit.	Color.	Taste.	Smell.	Reaction.	Inorganic Salts.	Organic driven out by heat.	Total.	General Remarks.
No. 27	Ten feet below surface.	Trace of deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	5.67	6.62	12.29	
No. 28	Twenty feet below surface.	Trace of deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	3.78	2.83	6.61	
No. 29	Thirty feet below surface.	Trace of deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	3.78	3.78	7.56	
No. 30	Forty feet below surface (bottom of the Lake.)	Trace of deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	8.11	10.03	18.14	
No. 31	Fresh Pond from faucet in Cambridge, corner of Sparks and Brattle streets.	No deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	5.67	2.36	8.03	
No. 32	Cochituate, Revere House faucet.	No deposit.	Clear.	Tasteless.	Inodorous.	Faintly acid.	3.12	1.24	4.36	

II. TABLE OF DEPOSITS.

amples No. of	Locality.	Description.	Smell.	Sulphuretted hydrogen.	Ammonia.	Reaction.
No. 1.	Upper Mystic, near mouth of the Abajonna.	A fine, perfectly fresh muck, and loam.	Fresh muck, no offensive smell.	None evolved on boiling with water, or with acid water.	Trace wholly neutral.	Neutral or faintly acid.
No. 2.	Abajonna, at bridge of B. L. & N. R. R.	Vegetable refuse — contains live snails.	Not offensive.	Same result as above.	Same.	" " " "
No. 3.	Abajonna, between R. R. bridge and road.	Refuse — broken glass, klinkers, some hairs.	Not offensive.	Same.	Same.	" " " "
No. 4,	Abajonna, near mouth of drain from Waldemayer's tannery.	Sand, gravel, and organic matter.	Not offensive.	Same.	Same.	" " " "
No. 5.	Immediately below Cummings' large tannery.	Sand, sticks — black deposit.	No free smell.	On boiling yields trace of sulphuretted hydrogen, and smell of horse manure.		Acid.
No. 6.	At junction of Miller and Lexington sts., above mouth of Randall's brook.	Grass, roots, little organic matter, mainly sand.	No smell.	Boiling gives no smell.	No ammonia.	Neutral.
No. 7.	Mouth of stream at Horn pond.	Except 5 per cent. all sand and loam.	No smell.	Boiling with water, no smell, nit. acid, a little.		Faintly acid.
No. 8.	Mill pond between two tanneries below Pleasant st., Woburn.	Leaves, sand, a bit of leather scraping — black deposit.	No smell.	Boiling disengages sulphuretted hydrogen, which addition of acid increases.		Faintly acid.
No. 9.	Below all tanneries on the same stream.	Bits of wood, leaves, trimmings of leather, grass, no sand, black deposit, snails, live worms: all settles out, leaving the water clear.	No smell. Filtered solution slightly offensive to taste.	Boiling sets free H S. increased by acid.		Acid — 10 parts of distilled water added to filtered water made it tasteless.
No. 10.	At outlet into Horn Pond.	Ground leather, and trimmings from beaming room, swarming with worms, grass, and organic matter. Filters nearly clear.	Trace of free smell of sulphuretted hydrogen.	Boiled gives less H S. than No. 9.	Strong acid reaction.	Same as above; filtered solution diluted with ten parts of distilled water tasteless.

II. TABLE OF DEPOSITS. — *Continued.*

mples o. of.	Locality.	Description.	Smell.	Sulphuretted hydrogen.	Ammonia.	Reaction.
o. 11.	Russell's brook below Shaw's tannery and above the road.	Gravel, sand, ground leather.	Free smell of swamp muck: not offensive.	Boiling expelled more H S. than any previously examined deposit.	Strongly acid.	Same.
o. 12.	Russell's brook half way from road to mouth.	Leaves, stems, organic matter, ground leather, sand and gravel.	Slightly offensive on stirring.	Boiling made more offensive than No. 11, and this was increased by addition of acid,	Faintly acid.	Filtered solution, taste and smell both lost on dilution with ten volumes of dist'ed water.
o. 13.	Mouth of Russell's brook.	Sand, leaves, bits of wood, mould, ground leather.	Less offensive than No. 12. Scarcely appreciable.	Boiling freely expelled H S.	Acid.	Same.
o. 14.	Halfway from mouth of Russell's brook to Wedge pond.	Twigs, leaves, little ground leather, much like No's. 11, 12, 13.	H S. appreciable smell when stirred.	On boiling more H S. than any of all before examined, which was increased by addition of acid.	Acid.	Filtered solution a little turbid, but tasteless and odorless with ten times its volume of distilled water.
o. 15.	On side of Spy pond inlet to Fresh pond, north of road to Belmont.	Very homogeneous muck mud.	Little spontaneous smell except of muck.	On boiling and addition of acid gave off as much H S. as that from any except, perhaps, No. 14.		

It is in a degree unfortunate that a number of the manufacturing works were not in operation at the time the waters were collected, but it will be seen that the most important results arrived at would not have been materially influenced had the works all been in full operation.

THE ABAJONNA.

At the request of Mr. Moseley, proprietor of a large tannery on the Abajonna, I made a report about a year ago, upon the effect of his tannery on the Mystic water. It was made at a time when all the works on all the tributaries to the Upper Mystic were in full operation. I submit this report, with Mr. Moseley's approbation, as a part of my present report, for the purpose of comparison. It will be seen that any just inference to be drawn from the comparison is not unfavorable to the prospective salubrity of the water.

I present further in regard to the upper Abajonna the recent analyses of the water along the stream to the junction with the Wedge pond outlet: —

	Inorganic.	Organic.	Total.
From Burbank's Pond above Frye and Thompson's factory (No. 12),	2.82	2.82	5.64
From Abajonna at bridge under Stoneham branch railroad (No. 18)	5.65	0.93*	6.58
From Stoneham brook (No. 15) .	5.16	1.88	7.04
From Baeder, Adams, and Co.'s glue stock washing, upper surface of drain (No. 13)	9.42	3.76	13.18

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* The small amount of organic matter, which a repetition of the analysis confirmed, supports the conviction that at or near the point where the sample was collected a spring enters the stream. That the waters of the several streams to some extent preserve their individuality for a time, after joining the main trunk, seems highly probable.

From Baeder, Adams, and Co.'s glue stock washing, lower current of drain (No. 14)	8.47	7.53	16.00
From Baeder, Adams, and Co.'s glue stock washing, southerly drain (No. 16)	10.36	3.76	14.12
From a point 200 feet below junction of Stoneham brook with Abajonna (No. 17)	6.14	5.16	11.30
Abajonna just above Moseley's tannery (No. 1)	4.70	3.76	8.46
Winchester pond, 700 feet below Moseley's tannery (No. 20) .	3.76	2.82	6.58
Winchester pond, west side of Boston and Lowell railroad (No. 22),	4.70	2.82	7.52
Outlet of Wedge pond (No. 21) .	6.59	2.82	9.41
Abajonna, below Main street and above Waldemayer's tannery (No. 23)	4.70	4.70	9.40
Abajonna, below Waldemayer's tannery (No. 24)	5.65	1.88	7.53
Surface of Mystic pond (No. 26) .	3.78	2.83	6.61
Last year in same month at Gate House it was	3.94	1.36	5.30

Of these samples of water No. 13 has faint odor of glue stock; No. 14 is offensive to the sense of smell; Nos. 12, 20, 23, and 24 have faint taste of swamp-water. All are substantially tasteless. Most are neutral or have a very faint acid reaction to delicate test paper.

DEPOSITS AT THE BOTTOM.

It might be supposed that the mud or earth at the bottom would, as the representative of organic residual matter, finding its way into the river and lake, be found capable of yielding an offensive extract.

A sample of the bottom of the Mystic pond, near the mouth of the Abajonna, is, on drying, a fine, fresh muck loam. On boiling it with water it does not yield a trace of sulphuretted hydrogen or of ammonia; — acid disengaged no sulphuretted hydrogen from the air-dried mud.

A sample from near the mouth of the drain from Waldemayer's tannery contained sand, gravel, and organic matter. It yielded on boiling with water no trace of sulphuretted hydrogen or appreciable ammonia. Boiled with acid it yielded no sulphuretted hydrogen.

A sample of deposit from the Abajonna at the crossing of the Lowell railroad, and below Moseley's tannery, contained fine, earthy matter, live snails, and vegetable refuse. It yielded on boiling with water not a trace of sulphuretted hydrogen or of appreciable ammonia. Acid treatment of the air-dried mud gave no sulphuretted hydrogen.

A sample of bottom deposit at a point higher up contains slag, broken glass, some hairs, and earthy matter. Like the others on boiling with water it yielded no trace of sulphuretted hydrogen or of appreciable ammonia. Boiling with acid gave no sulphuretted hydrogen.

The examinations for free sulphuretted hydrogen were made when the deposits were fresh. The examination for latent sulphuretted hydrogen — that is, sulphuretted hydrogen combined with bases — was not made till the muds had been for some weeks exposed to the air. It is, therefore, possible that the sulphides had become oxidized to sulphates. As their decomposition and the disengagement of sulphuretted hydrogen involves the presence of acid in the water, which may be said to be uniformly wanting at the points where the deposits were collected, there is no just fear that the sulphides would have taken any other course in their natural position than that they took on drying after collection.

These deposits, if they may at any time have had capacity to yield offensive matters to the water above, have lost it.

Indeed, they are below the point to which any contributions of what may be regarded as offensive solid matter made above them, are carried by the current. Or, if they have reached these points, the present condition of the deposits illustrates the reserve of self-purifying power of the water that flows over them.

These determinations justify the inference that whatever comes into the river above these points of a nature to yield sulphuretted hydrogen or other offensive gas in progressive decay, has been oxidized and destroyed by the self-purifying power of the water itself. It leaves us justified in inferring that at all times, if there should be a trace of parent material for evolving sulphuretted hydrogen in the mud, as there always is when a worm or fish dies and falls to the bottom of a lake or pond, it will be speedily destroyed by the water and the air it contains in solution.

THE GLUE STOCK MANUFACTORY

derives its supply of water from a small tributary to the Abajonna, known as the Stoneham brook. These works gather up the scraps and trimmings of hides from tanneries, treat them with lime to separate the hair where it has not before been removed, wash and clean them, and send them to market. It is understood that the works are soon to be enlarged and joined on the spot with a large glue factory.

The composition of the Stoneham brook residue is: —

	Inorganic.	Organic.	Total.
In one gallon	5.16	1.88	7.04
The surface of one drain from the works contains in one gallon .	9.42	3.76	13.18
The bottom of the same drain contains, separated from the deposit, in one gallon . .	8.47	7.53	16.00
The water from the sluice south of the Stoneham brook contains in one gallon . . .	10.36	3.76	14.12

At present the washing of the scrap is attended with the removal of some soluble and a little insoluble organic matter, which is received into sluiceways leading to a meadow where the water is filtered through a considerable margin of swampy meadow before reaching the channel of the Abajonna.

	Inorganic salts.	Organic.	Total.
Above the site of this factory the composition of the water of the Abajonna is in one gallon . .	5.65	0.93*	6.50
Below the meadow . . .	6.14	5.16	11.30

Here is a manifold great increase of organic matter, but the analysis of the water a mile further down, just above Moseley's, shows that the organic matter has been largely destroyed and the inorganic diluted.

	Inorganic.	Organic.	Total.
One gallon contains . . .	4.70	3.76	8.46

The organic matter at Burbank's pond, above all the influence of the factories, is 2.82 grains, only one quarter less.

The future erection of extensive glue works will demand greater service of the filtering power of the meadow below. How much, will depend somewhat on the care with which the manufacture is conducted. The works that are to be brought here have been for some time in operation on Cummings' brook, below Cummings' tannery. We have, therefore, had their influence on the water of the Mystic ever since the period of its introduction. The effect they have produced hitherto was merged with that of Bishop's and

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* The small amount of organic matter, and the relatively large amount of inorganic matter, seem exceptional, — perhaps they point to a spring at this point, as already suggested.

Cummings' tanneries, which will be considered in their place. The distance the water will flow before reaching the Upper Mystic from Stoneham brook and the ponds through which it must pass will be about the same as they have been hitherto. I see no reason why the ill effect of production in one locality should exceed that in the other.

For the further consideration of the influences tending to deteriorate the Abajonna, I beg to refer to the accompanying report in regard to the influence of Mr. Moseley's tannery.

THE TRIBUTARIES TO HORN POND.

The water of the brook (No. 7) flowing near the great piggery, and emptying into Kendall's pond, is a water of primitive purity. Below the pond, but above the junction with Cummings' brook, it contains in one gallon,

Inorganic.	Organic.	Total.
Not determined.	.....	1.25

Water from Cummings' brook above all the factories on this stream contains in one gallon,

Inorganic.	Organic.	Total.
3.76	7.53	11.29

Now, had this water been taken from below any of the factories, it would have occasioned solicitude. But when we consider the large amount of organic matter in the sources of the stream at this season, — mainly the extract of falling leaves, — the explanation of the fact is furnished us.

Below Bishop & Co.'s tannery, where extracts of bark, elsewhere concentrated, are used, the bed of the settling pool and the bed of the stream are overspread with black powder from the extract. The water was collected when the tannery was in operation, though not so fully as it is at some times.

It (No. 10) was taken from the bed of the brook at South Bedford-street crossing, above the little pond nearest Cummings' tannery.

	Inorganic.	Organic.	Total.
One gallon contains,	9.42	6.59	16.01

The organic matter is less than it was above Bishop & Co.'s tannery, but the inorganic matter has increased.

Immediately below Cummings' tannery, but above the junction of the glue factory sluiceway, the water (No. 9) contains,

Inorganic.	Organic.	Total.
15.08	5.65	20.73

Below the junction of the sluiceway from the glue factory — where little was going on — and where, therefore, we have the influence chiefly of the running stream on the water of (Nos. 10 and 9), we find in one gallon,

Inorganic.	Organic.	Total.
10.36	6.59	16.95

Just above the mouth of this brook, but below the pure tributary of Kendall's pond, after flowing less than half a mile, we have a water (No. 6) absolutely tasteless and inodorous, and containing in one gallon,

Inorganic.	Organic.	Total.
4.70	1.41	6.11

That of the upper Mystic, near the Gate-house, is not greatly different. It contains of

Inorganic.	Organic.	Total.
3.78	2.83	6.61

In the deposit at the mouth of Cummings' brook, where it empties into Horn pond, and where any mud not already deposited, feels the quiet of the still water and settles to the bottom — the total amount of organic matter was a little above five per cent., the balance being beach sand. It yielded no trace of sulphuretted hydrogen or ammonia. The suspended organic matter from the tanneries had all, long before, settled out.

Immediately below Cummings' tannery the mud yields sulphuretted hydrogen and has an exceedingly offensive look and smell; but at the corner of Lexington and Willow streets, less than a quarter of a mile below, the deposit collected at the bottom of the stream was mainly sand, grass and roots, and yielded no sulphuretted hydrogen or ammonia.

The just inference from these determinations seems to be that the power on the part of the factories above to injure the water, so far as organic matter is concerned, is neutralized before the waters reach the lake. In this case the activity of the works was perhaps less than usual; Cummings' establishment, the most extensive, however, seemed to be in full action.

The inorganic matter that is added from these works is chiefly common salt from the hides, which, unless in very large quantity, does not increase the hardness of the water, or impair it in any way for domestic use.

STREAM CROSSING PLEASANT STREET, NEAR WATER STREET.

The water above Pleasant street (No. 4, Table I.) contains the normal water-shed, to which is doubtless added some drainings from the district above. One gallon contains,

Inorganic.	Organic.	Total.
7.53	4.70	12.23

At the mouth of the stream but a short distance below where it empties into Horn pond (No. 5, Table I.), one gallon contains,

Inorganic.	Organic.	Total.
7.53	6.59	14.12

Between the two localities are the tannery of Stephen Dow & Co., and the sheep-skin works of Mr. Davis (not in operation).

Mud (No. 8, Table II.) from the bottom of the pond between these points contained powdered leather and scrapings of leather. It gave off spontaneously no odor of sulphuretted hydrogen, but did on boiling, and more on boiling after the addition of hydrochloric acid.

Mud (No. 9, Table II.) from below Davis's works contained trimmings of leather, grass, shavings, bits of wood, live worms, snails, and no sand. Settled clear from the water, leaving the water slightly offensive to taste. The sand had no offensive smell. On boiling with water it gave off sulphuretted hydrogen, which was increased on the addition of hydrochloric acid. The clear solution diluted with ten times its volume of pure water became tasteless.

The deposit (No. 10, Table II.) from the bed at the mouth of the stream where it empties into Horn pond is a mass of organic refuse, scraps of leather, of trimmings apparently from the beaming-room (untanned scrapings), leaves and grass; the whole, and especially the untanned scrapings of hides, swarming with small worms, evidently in a short time destined to consume the fresh tissue.

The smell was offensive, and the presence of sulphuretted hydrogen on boiling appreciable, and rendered more so by addition of acid. The deposit settled out, leaving the liquor above quite clear and but slightly offensive to taste. To this the addition of ten volumes of pure water was enough to render it tasteless.

Water (No. 3) taken from Russell's brook, below numerous tanneries, contained in one gallon,

Inorganic.	Organic.	Total.
14.13	5.65	19.78

Water (No. 2) from below Shaw's tannery, the nearest in this stream to the junction of Russell's brook with the outlet from Horn pond, and below the road, contains in one gallon,

Inorganic.	Organic.	Total.
16.96	6.59	23.55

The deposit (No. 11, Table II.) from just above the road and a short distance above the point where the water (No. 2) was taken, contained gravel, sand, muck and ground leather. Gave off freely sulphuretted hydrogen. The liquid extract filtered from the solid part lost its offensiveness to taste in ten volumes of pure water.

The deposit (No. 12, Table II.) from immediately below the road contained the same ingredients, with smaller proportion of sand and gravel, and was decidedly more offensive to smell. Like all the offensive muds, it was acid. The taste and smell were both lost on dilution of the filtered water of the deposit with ten times its volume of pure water.

The deposit (No. 13, Table II.) from the mouth of Kendall's brook was much less offensive than No. 12, a few rods above. It contained more leaves, bits of wood, mould and some sand. The filtered water of the deposit lost both taste and smell in ten times its volume of pure water.

The deposit (No. 14) from the outlet of Horn pond, half the way to Wedge pond, contained ground leather, twigs and leaves. Gave off on boiling more sulphuretted hydrogen than any of the preceding samples; yet ten times its volume of distilled water rendered the water filtered from its deposit tasteless and odorless.

The water (No. 19) near the point where this mud was collected, and in the regular outlet of Horn pond, below the mouth of Russell's pond, and above the Wedge pond contains in one gallon,

Inorganic.	Organic.	Total.
6.81	1.51	8.32

Notwithstanding the objectionable character of the bed of the stream, as shown in deposit No. 19, the organic matter has fallen to a minimum.

The water (No. 21) at the outlet of Wedge pond, below the sheep-skin washing, contains in one gallon,

Inorganic.	Organic.	Total.
6.59	2.82	9.41

The water above Waldemayer's on the Abajonna (No. 23) contains in one gallon,

Inorganic.	Organic.	Total.
4.70	4.70	9.40

Below Waldemayer's (No. 24) it contains,

Inorganic.	Organic.	Total.
5.65	1.88	7.53

At the Mystic pond (No. 26) one gallon contains,

Inorganic.	Organic.	Total.
3.78	2.83	6.61

As bearing on the significance of the results of examining the muds and deposits, I visited Fresh pond and collected from the side of the inlet from Spy pond, north of Belmont road, below the surface of the water, the black mud which borders this inlet through the marsh. It was to the eye a mass of fine, black swamp mud. But on treating it as the muds from the inlets to Horn pond were treated, it disengaged sulphuretted hydrogen very much in the same way, and was in respect of offensiveness to the sense of smell not inferior to most of them. Now, this long stream from Spy pond to Fresh pond lies in a body of muck saturated with the sulphates of ancient sea-water carried up by high tide, and which must for an indefinite time to come continue to act as it now does. Yet I am disposed to think it is equally true that no sulphuretted hydrogen ever reached the Fresh pond surface-water from this source, or from any other source.

I have carefully examined the water of the Upper Mystic pond, from the surface to the bottom, without finding in it any trace of sulphides, or enough of chlorides to indicate their presence by the test of sugar of lead, though the addition of silver salt reveals them.

At the time of Silliman's analysis in 1862, there seems to have been a larger amount of salt in the lower portions of the body of water than there is now.

Thus: Silliman found the surface-water near the site of the present Gate-house to contain in one gallon a total of 9.58; at a depth of 18 feet, the saline matter 15.68; and at a depth of 50 feet, 63.58.

At the same time he found the water nearly opposite the then residence of Mr. Everett, at the mouth of the Abajonna, to contain only 3.22.

But the analyses of five samples recently collected at intervals of ten feet from the surface to the bottom have given a better result for the lake, indicating, perhaps, the influence of the low water during the last summer in diluting the deeper water.

	Inorganic.	Organic.	Total.
At the surface one gallon gives .	3.78	2.83	6.61
Ten feet below (repetition gave the same result) . . .	5.67	6.62	12.29
Twenty feet below . . .	3.78	2.83	6.61

Thirty feet below . . .	3.78	3.78	7.56
Forty feet below . . .	8.11	10.03	18.14

The chief foreign inorganic matter in the water is common salt, with a lesser proportion of sulphates of soda, lime and magnesia, and occasional small quantities of nitrates and carbonates.

SUMMER DROUTH.

In the summer of 1872 numerous analyses of the Mystic water were made by Prof. Chandler of Columbia College, and Pres. of the New York City Board of Health, and by S. Dana Hayes, Esq., of Boston. Two analyses of water, collected late in July by Mr. Hayes, gave an average of total in one gallon, inorganic and organic together, . . 5.62 grains.

An average of seven made early in August, by Prof. Chandler, gave . . .	5.72	"
An average of three, by Mr. Hayes, in September, gave	5.68	"
My own determinations in November of the same year gave, for the water at the Gatehouse	5.30	"

The details are given in the accompanying report upon the influence of Moseley's tannery. At the time my determinations were made, Mr. Sawyer found 42,272,000 gallons for the daily flow of the Abajonna at its entrance to the Mystic. This is undoubtedly above the average. The report of Messrs. Kirkwood and Francis gives the rain-falls in Cochituate basin, for 1871, as follows: —

For July . . .	0.48	of an inch.
" August . . .	0.90	" "
" Sept. . . .	0.67	" "
" Oct. . . .	0.97	" "
" Nov. . . .	1.61	" "

And they assume for the Mystic, in a season of drouth for these months, as follows: —

For July	0.30
" August	0.50
" Sept.	0.60
" Oct.	1.00
" Nov.	1.80

If these be something near the relative amounts of rain-fall for the several months in average years, the foregoing analyses acquire a new significance. They leave us to infer that, notwithstanding the probable unusual dilution of the organic and inorganic matters in November, the higher temperature of the summer intensifies the self-purifying power of the water, and so as effectually consumes the organic matter as a larger volume of lower temperature would do.

The average organic matter of all the analyses of Chandler and Hayes for July, August and September, was for each gallon only 1.90 grains.

From my own analyses on the line of the Abajonna, from the pond above the lace-leather factory (Burbank's pond), that is above all the factories down to and including the water at the entrance to the aqueduct — five samples in all — the average was for each gallon 1.15 grains.

During the summer and fall of 1872, that is the period when the above determinations of Prof. Chandler, Mr. Hayes and myself were made, all the factories were in operation.

Now, when a part of the factories are suspended, and the water at least more abundant than in summer, the organic matter at the mouth of the Abajonna, and at the surface of the Mystic, is for each gallon 2.83 grains.

Now take the organic matter in the upper waters of Cummings' works in Nov., 1873 (No. 11), 7.56 grains.

And at a point north of Pleasant street, above Dow's facttory, of the same date, at 4.70 grains.

And at Burbank's pond, above the factories on the Abajonna, at 2.82 grains.

And immediately below Baeder & Co.'s glue stock washing works, at 5.16 grains.

And compare them with the organic matter in the water at the Mystic lake, 2.83.

And the result is satisfactory as showing the self-purifying power of the water.

Compare, too, the organic matter of the previous year.

At Burbank's pond it was, a year ago, 0.95 grains,

And after all the accessions below at the entrance to the aqueduct, only 1.36 grains.

Chemistry certainly does not furnish any ground for distrusting, at any season of the year, the self-purifying power of the water with only the present agencies of contamination.

NATURE OF THE ORGANIC MATTER, AND HOW NATURAL AGENCIES REMOVE IT.

The organic matter, of the nature of tan bark, which is substantially of the same character as the extract of leaves and bark drained from the surface of wooded lands, must be regarded as harmless. It is speedily consumed by the self-purifying power of a running stream. When combined with gelatine to form leather it is practically insoluble, and so of course harmless, when the results of scouring the tanned hides reach the water bed, unless the quantity be something very great. Leather bags for carrying drinking-water are extensively employed and leather cups for its service are in use the world over.

Where shreds of untanned hides from the beaming-room through carelessness reach the water, they speedily disappear, as do the bodies of fish that perish in ponds or streams from disease or old age. Nature provides scavengers for them. If not promptly consumed by minute organisms of inferior order to be resolved into nearer approaches to inorganic bodies, and so rendered inoffensive and harmless, the same end is accomplished by oxidation, as in the case of sewage. The self-purifying power of running streams, reinforced along their course by springs, is one of the great economical agencies of organic life. There is a limit to it, of course, but from this limit chemistry indicates that the Mystic is yet far removed. There seems to be no ground for believing that appreciable organic matter, of a character to render the water insalubrious, reaches Charlestown or Somerville, or Chelsea or East Boston, from any manufacturing establishment in the basin of the Mystic.

If the existing factories in the Mystic basin are to be enlarged in the future, and new ones are to be added, and the region surrounding them to become more densely populated than it now is (which seems certain), I can conceive a time coming, when, in seasons of drouth, bringing low stages of water in the streams, while the agencies of impurity remain constant, the drainage from the manufactories and domestic sewage would overtask the self-purifying power of the water.

The relief to be sought in view of such a contingency is, of course, independent sewage for both factories and dwellings, discharging below the Lower Mystic within the reaches of the sea.

SUMMARY OF CONCLUSIONS.

1. Of the fitness of the Mystic water for boiler use, judging from a comparison of the amount of its organic and inorganic matters with that of these ingredients in the waters of Lake Cochituate and the Croton, there seems to be no doubt. The results of inquiries conducted by the Water Board have, I understand, proved satisfactory.

2. Of its fitness for domestic use in the laundry, it is substantially what it was at the time of its introduction, a remarkably soft water.

3. Of its salubrity as a drinking water, it will compare well with the best waters in use for city supply. It has experienced no appreciable deterioration since its introduction.

4. If the contributions from factories and domestic sewage continue to be no greater than they are now and have been hitherto, and the volume of water remains the same, the self-purifying power of the water will be adequate to maintain its salubrity.

5. In case the factory drainage and domestic sewage discharging into the tributaries are steadily increased, and especially if the supply of water be from any cause diverted or diminished, a time will come when the self-purifying power of the water will be overborne. When such time comes independent drainage for the factories and domestic sewage to a point below the entrance to the aqueduct will restore the balance.

Respectfully submitted,

E. N. HORSFORD.

CAMBRIDGE, Dec. 30, 1873.

REPORT

ON THE

EFFECT OF MOSELEY'S TANNERY

ON THE

SALUBRITY OF THE MYSTIC WATER.

1873.

REPORT ON THE SALUBRITY OF THE MYSTIC WATER.

To find the effect of Moseley's tannery on the composition of the water of the Charlestown Water Works, it is necessary to know: —

1st. The composition of the water immediately above the tannery; and

2d. That of the water below the works before the addition of water from any new source;

3d. The volume of water passing through the tannery and discharging into the Abajonna;

4th. The composition after passing through the tannery, and before discharging into the river;

5th. The effect upon this water of discharging it into the larger volume of the Abajonna;

6th. The volume of water passing through the aqueduct, and over the dam and river at the gate-house.

For the better understanding of the whole subject it is desirable, in addition, to take into account the composition of the water of the Abajonna at a point above any manufacturing establishments that may be charged with adding foreign matter to the stream; also, that of the water at the mouth of the Horn pond stream or Wedge pond outlet; the larger source of the supply to the upper Mystic pond before it united with the Abajonna below Moseley's; and, lastly, of the water as it enters the aqueduct at the Gate-house.

I accordingly collected water: —

1st. From the Burbank pond, above the lace-leather factory, or Frye's tannery, about two miles from Moseley's tannery, toward the sources of the Abajonna.

2d. From under the bridge of the highway, crossing the Abajonna immediately above Moseley's tannery.

3d. From the archway of the Boston and Lowell railroad, below the tannery.

4th. From the head of the drain leading from the tannery into the Abajonna.

5th. From the mud at the bottom of the drain.

6th. From the still water over the delta at the mouth of the drain.

7th. From the mouth of the Horn pond stream, in the archway of the Woburn Branch Railroad.

8th. From the Gate-house.

Numbers five and six were collected on the 15th of November last (1872); all the others on the 26th.

The water from the pond on the Abajonna, above the lace-leather factory, — the normal water of the drainage of the Mystic basin, — contains of grains in one gallon,

Salts.	Organic matter.	Total.
2.27	0.95	3.22

Between this pond and Moseley's tannery there are several manufacturing establishments, including an extensive glue stock factory.

There are several ponds and marshes on the stream, all the waters of which pass under the highway bridge immediately above Moseley's tannery, and at a short distance from the mouth of the pump pipe, through which water is drawn for the main supply of the reservoirs of the tannery.

At that point below the bridge, I collected water for analysis. It contained in one gallon,

Salts.	Organic matter.	Total.
3.21	1.04	4.25

Mr. Moseley's tannery is situated on a little rise of land, on the right bank of the stream; and directly below the establishment a pond spreads out, through scattered swamp shrubbery, chiefly on the right side of the river, like the loop of a capital P, while the main current of the stream preserves its course to the left of the pond. This pond gives great stillness to the water into which is delivered the drainage from the tannery.

Between the tannery and the water is a margin of swamp muck, which has been covered with spent tan bark. Within this strip of land, above high-water mark, is a long line of parallel and connected trenches, which has been dug to allow the wash water from the scouring and beaming of the leather and hides to settle. At the end of it, where it discharges into the drain, is a charcoal filter, through which the water, after slowly flowing through a channel a thousand feet long, must finally pass. Beyond the charcoal filter it unites with water from the other parts of the tannery and passes through the open drain to the pond below the works. The soil under the tan bark is saturated with the extract of the tan bark, and to some extent, this extract finds its way to the drain and the pond below.

Near the lower end of the pond lying in the bayou below the factory, the water passes through an arch under the Boston and Lowell Railroad. It carries with it the total effect of the Moseley tannery.

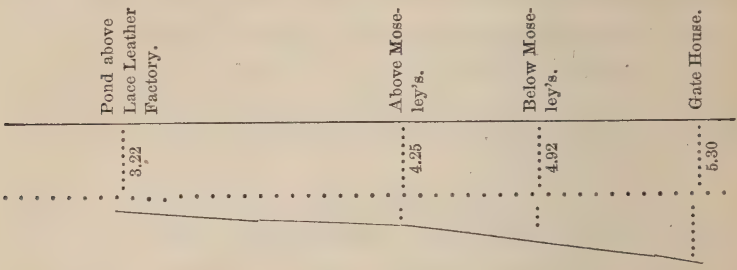
I collected the water of the Abajonna where it enters the archway under the Lowell Railroad. It contains in one gallon,

Salts.	Organic Matter.	Total.
3.22	1.70	4.92

A gallon of water collected at the Gate-house contains,

Salts.	Organic Matter.	Total.
3.942	1.36	5.30

From these results a profile may be drawn which will illustrate the changes in the composition of the water.



It now appears that more than three-fifths $\left(\frac{3.22}{5.30}\right)$ of the foreign matter in solution at the Gate-house is due to the incidental and inevitable drainage of the soil of the Mystic basin *above all* the factories.

Of the remaining (less than two-fifths), the share contributed by Moseley's tannery will appear from the following: The open drain leading from the tannery is about one hundred and fifty feet long, and presents a dead level of pulpy, yellowish and dark-reddish mud, offensive to the sight, and such as to induce a superficial observer to infer that the works must more or less injure the water. The light granular matter so objectionable to the eye is found, however, not to be especially offensive to the taste or smell. It proves, on examination, to be mainly composed of fine particles of leather, removed in the scouring process. The smell is that of new leather, with no smell of decomposition; and the taste that of leather and salt.

The extent of the possible injury to the water from the matters discharged into the drain has been subjected to determination.

Mr. Sawyer found, as the result of prolonged hydraulic observations, that the water discharged through the common drain of the tannery amounts to 13,000 gallons in twenty-four hours

The remaining water pumped from the Abajonna, and the well water used in the works, passes off as steam or by evaporation from the drying leather.

A hundred hides a day are introduced into the tannery with whatever salt they contained to preserve them. This salt, which varies in quantity with the season, weight of the hides, and time they must be kept in the green state, is estimated to average, as I have learned from various slaughter-houses and tanneries, ten pounds for each hide. All this passes into the drainage. The water is employed in the various processes of tanning and dressing the hides. The tan vats are not emptied, but the liquor is used to extract fresh bark to keep up its strength. The main body of water used in beaming and dressing, with its fine fibrous matter, passes into a long canal, already mentioned, of about 1,000 feet, to settle before going through a charcoal filter into the drain. The matters which settle in this canal are from time to time shovelled out and sold to farmers. So completely is the lime employed to remove the hair combined with gelatinous matter and deposited in the canal, that the water which flows through the charcoal filter contains only a trace of it. At the head of the open drain the wash water comes in from other parts of the factory, containing the product of scouring the leather.

Analysis of the mixed drainage water, received in a temporary flume, was made. It is a dirty, brownish-yellow liquid, owing its color principally to tan liquor. Its chief taste is that of salt with a flavor of new leather. Its odor is mainly that of tan-bark, or of new leather. A gallon contains,

Salts.	Organic Matter.	Total.
628.4	100.4	728.8

This water, on being diluted with four parts of pure water, is only slightly brackish, but still colored. Diluted with eighty parts of pure water, it is but faintly clouded, perfectly tasteless, and settles clear in a few days. Diluted with four hundred parts of water, it becomes colorless, tasteless, and clear at once.

The flow of water from the temporary flume at the time this water was collected was about three gallons per minute; at times the discharge rises to much above this rate, and at others it sinks to less than a quart.

On one occasion, when the quantity of water entering the drain was so small as to be scarcely recognizable, I collected the reddish, muddy liquor of the drain, from which the previously suspended insoluble substances had settled out, at a point some thirty yards towards the mouth of the drain from its head.

The water drained from the suspended matters was of a cherry-red color. Its odor was of tan bark, and its taste of new leather and salt.

One gallon contains: —

Salts.	Organic matter.	Total.
352.2	102.1	454.3

This liquor deposited continually. On dilution of one part with ten of clear water it lost most of its cherry color, and with one part diluted with one hundred parts of pure water it became perfectly clear.

On examining the ground on either side of the drain it was obvious that the extract of tan bark or new leather came from the dripping of hides hung up to dry over the spent bark covering the muck, and, doubtless, also from the rain falling on and soaking through the tan bark.

On the same day that the water from the bottom of the drain was collected, I noticed that at a little distance, and within a few feet of the mouth of the drain, and over the delta of leather scourings settled out, the water in all directions toward the pond was clear. By suspending a bottle from the end of a hoop-pole, while standing on the shore, I collected a sample of the water immediately over the delta where the clear water was less than a foot in depth. It was to the eye clear, and to the palate tasteless as the best pond water. On careful examination it was found to contain now and then a trace of still suspended fibres of organic matter.

Analysis showed it to contain: —

Salts.	Organic matter.	Total.
4.54	8.23	12.77

These results show how, and how rapidly, the accumulated impurities of the drain fade away. Most of the fine particles of ground leather sink. The extract of the tan bark rapidly dilutes and becomes colorless. The heavier salt water sinks into the soil below, so that according to the results of analysis its effect at the archway of the Lowell Railroad is scarcely appreciable (3.21 : 3.22). The quantity varies with the intermittent operations of the tannery. When the water from a batch of fresh hides is run off, the salt in the water will be abundant, but the maximum average admits of easy calculation; at ten pounds to a hide, with a hundred hides a day, each of the 13,000 gallons passing through the tannery daily would contain one-thirteenth ($\frac{1}{13}$) of a pound daily, that is 590 grains.

Now, assuming that the whole of this salt — one thousand pounds for each work day — is added to the Abajonna, and is uniformly diluted through the whole water passing out of the Upper Mystic pond each twenty-four hours, over the dam and weir, and through the aqueduct at the Gate-house, it is easy to calculate this effect of Moseley's tannery.

Mr. Sawyer found this volume of water to be 42,272,000 gallons per day.

Divide the grains in a thousand pounds by this volume, and we shall have the weight of salt for each gallon. It amounts to (0.18) eighteen hundredths of a grain per gallon.

But this analysis of the water at the archway under the Lowell Railroad shows, as does that at the Gate-house, that a small fraction only of the salt water mingles with the stream, the balance, by reason of its greater specific gravity, holding its place *below*.

The analyses are obviously perfectly conclusive on this point, but it may be well to illustrate the subject.

The soil of the region is porous, gravel and sand; water sinks readily through it until it reaches the rock below, or the level of the pond, and then flows along to the pond; salt water takes the lower position, displacing the lighter water, just as the salt water of spring tide runs in at the outlet of the Lower Mystic, and flows under the sweet water at the surface. The same takes place, or formerly took place, at Fresh pond and Spy pond. As an illustration of this, I submit the results of an examination made by me, in 1860, in a report made to the Harbor Commissioners upon the Mystic-pond water. This shows that in the Lower Mystic the sweet water extends downward about twenty feet, while below that level, throughout the pond, the water is increasingly salt. The same condition, to a less extent, prevails in the Upper Mystic, separated by a ridge of sand and gravel from the lower pond. It was observed by Silliman, and he reports to the Water Commissioners, in 1862, that the water at the surface contains, for each gallon, 7.50 grains of saline matter.

At a depth of 18 feet from the surface 15.68 grains.
And at a " " 50 " " " 63.58 "

This condition doubtless prevails now. That is, strongly saline water finds its way at once to the lower level, and, in many cases, doubtless pursues an underground drainage to the lowest level, mingling but slightly with the surface water. Accordingly, we find the effect of the saline matter of Mr. Moseley's tannery to be practically inappreciable at the Gate-house.

Common salt, except in quantity so large as to make the water brackish to the taste, is not harmful. It does not make water hard, as lime and magnesia salts do, for washing purposes.

The addition of organic matter, which is chiefly extract of tan bark, and is substantially of the same nature as that of the ordinary drainage of forest land, is a harmless constituent, and is by natural process continually oxidizing and disappearing as water and carbonic acid.

The experiment of dilution and settling performed in the laboratory, and resulting in rendering the water clear and palatable, is constantly carried on, only to greater and more satisfactory extent, as the water of the drain from Moseley's tannery is mixed with and diluted by the still water of the bayou into which the drain discharges.

The water of the mouth of the Horn pond stream, before its junction with the Abajonna, contains the same amount of organic matter that the Abajonna does, but the saline constituents are larger in quantity. One gallon contains,

Salts.	Organic matter.	Total.
4.17	1.70	5.87

From the junction to the Gate-house the foreign matter diminishes by half a grain to the gallon, of which the organic matter forms the larger part. In other words, the organic matter is diminished by oxidation, and the saline matters of the Horn pond stream diluted by the purer water of the Abajonna.

The changes in composition will better appear from a comparison. Of grains, one gallon contains,

	Salts.	Org. matter.	Total.
Pond above Lace-Leather factory .	2.27	0.95	3.22
Bridge above Moseley's tannery .	3.21	1.04	4.25
Archway L. R. R. below " .	3.22	1.70	4.92
Horn pond stream . . .	4.16	1.70	5.87
Gate-house	3.94	1.36	5.30

Analyses of the water at the Gate-house and its neighborhood have been made during the past summer, and at previous periods, and may be placed on record with profit in enabling us to form a correct judgment as to the present condition of the water.

The foreign matter found by Mr. S. Dana Hayes in samples taken from different points gave (Boston City Doc. No. 89, Sept. 9, 1872),

No.	Samples.	Salts.	Org. matter.	Total.
1.	July 16th	3.75	1.91	5.66
2.	" "	3.78	1.90	5.68
3.	" "	3.79	1.91	5.70
4.	July 26th	3.82	1.90	5.72
5.	" "	3.68	1.84	5.52

BY PROF. CHANDLER.

No.	Samples.	Salts.	Org. matter.	Total.
6.	August 3d	3.81	1.96	5.77
7.	Average of 6 analyses	3.77	1.90	5.67

Another by Prof. Chandler gave,

Salts.	Org. matter.	Total.
4.199	1.633	5.832

The last, by Prof. Chandler, corresponds almost precisely with my analysis of the Horn pond stream at its mouth, above the junction of the Abajonna. It gave,

Salts.	Organic matter.	Total.
4.16	1.70	5.87

In 1860 I had occasion, as already mentioned, to analyze the surface water of the Upper Mystic pond from a point near the site of the present dam and Gate-house. (Report of Boston Harbor Commission, 1861.) One gallon contained, Sept. 10th, 1860,

Salts.	Organic matter.	Total.
8.43	3.40	11.83.

Prof. Silliman in his report on the Upper Mystic pond water, in 1862, gives an analysis of water "from the surface of the pond, about 300 feet from the west shore, on Wyman hill line." One gallon contained, May 23d, 1862,

Salts.	Organic matter.	Total.
7.50	2.08	9.58

These quantities, it will be seen on comparison, happened to be about double the quantities *now* present in the water, and yet they compare favorably with water of acknowledged excellence for domestic uses.

Prof. Silliman's analysis of water of the Croton Upper Reservoir gave, 1845,

Salts.	Organic matter.	Total.
6.66	4.28	10.93

Schuylkill water of the same period gave,

Salts.	Organic matter.	Total.
4.26	1.24	5.50

The results of the foregoing investigation may be thus summed up: —

1st. The normal amount of foreign matter in the Charlestown Water Works' water, due to the natural drainage of the Upper Mystic basin, above all factories, is

3.22 grains to a gallon.

2d. The addition to this amount from all sources connected with the use of the water on all the streams flowing from the basin, is

2.08 grains to a gallon.

3d. Of this 2.08 grains, nearly four-fifths (1.67 grains) is little else than common salt.

4th. Of this common salt Moseley's tannery contributes less than two-hundredths of a grain to the gallon.

5th. The organic matter discharged from Moseley's tannery is for the most part insoluble, and is not permitted to enter the stream, but settles out in a long settling canal, and is from time to time removed. Of the portion that is soluble, the greater part is of the nature of extract of leaves and bark, which is common to all surface waters draining forest lands, and rapidly oxidizes and disappears on dilution with running water.

The water at a few yards from the mouth of Moseley's drain is tasteless, and clear and soft, and suitable for all domestic purposes.

6th. The proportion of organic matter contributed by Moseley's tannery to that contained by the water at the gate-house, cannot be more than five-thousandths ($\frac{5}{1000}$) of a grain to a gallon.

(Signed,) E. N. HORSFORD.

Cambridge, Dec. 25, 1872.

Report on Waste Water.

REPORT ON WASTE WATER.

JOHN A. HAVEN, ESQ.,
President of the Cochituate Water Board: —

SIR, — The order of the City Council, addressed to the Cochituate Water Board in October, for information as to resources for "further supply of water," etc., etc., closes as follows, — "and the changes needed to prevent any waste of the present supply." This branch of the order having been referred to the Water Registrar, he would respectfully

REPORT:

That the permanent, serious and continual causes of waste of Cochituate water are through the use of hopper water-closets; the so-called self-acting closets; urinals which are constructed for a continual run of water; the use of hand-hose for the purpose of irrigation; bad plumbing materials and bad plumbing work; and the steady run of water which is suffered in winter time to prevent freezing.

The above recited are leading and aggravated causes of waste, amounting, in the whole, to an alarming percentage of the total supply furnished by the city.

This amount of waste, which is believed to equal one-third of all the water supplied, can be reduced to only a moderate percentage by stringent regulations regarding the descriptions of water fixtures allowed, and the quality of work.

HOPPER WATER-CLOSETS.

January 1st, 1873, there were 16,137 of the different styles of these "hoppers" located within the premises of water-takers. They are found in all classes of houses. In the best ones they are usually situated in the area under the sidewalk, or in back premises, exposed to frost, for the use of servants. The water is turned on in general by turning a crank, whereupon the water runs until turned off; and this turning off is precisely what is omitted, because, totally unlike the pan closet, — which must of necessity close when the hand is removed, — the water in the "hopper" flows on until the specific operation of turning the crank again is performed, which is very apt to be inadvertently, negligently, or willfully left undone.

SELF-ACTING WATER-CLOSETS.

Under this head are 209 self-acting closets — that is to say, by opening a door or by seat-pressure. These allow a flow of water only when in use, consequently the liability to these being left open is less than with the plain hopper; but they require a much larger quantity of water than either the pan or self-closing closet. For instance, a family of seven persons, each one using the self-acting closet five minutes a day, thus 209 closets, calls for 36,575 gallons, daily; while the same service by pan or self-closing closets would call for but 5,872 gallons, or saving in favor of the "pan or self-closing" of 30,723 gallons per day.

The manifest economy of the pan or self-closing closet over the "hopper" is still more forcibly shown from the following cases, which the introduction of meter measurement has enabled the department to set forth accurately: —

Case No. 1.

Where there were five hopper closets supplied, in twelve months they consumed	1,088,750 gallons.
By substituting pan closets for these, the consumption for the same length of time was reduced to . .	384,831 "
Amount saved	703,919 "

Case No. 2.

Where there were three hopper closets supplied, in twelve months they consumed	1,255,470	gallons.
By substituting pan closets for these, the consumption for the same length of time was reduced to	19,859	"
Amount saved	1,235,611	"

Case No. 3.

Where there was one hopper closet supplied, in twelve months it consumed	554,780	"
By substituting a pan closet, the consumption for the same length of time was reduced to	100,572	"
Amount saved	454,208	"

Case No. 4.

Where there were three hopper closets supplied, in twelve months they consumed	494,180	"
By substituting six pans for the three hoppers, for the same length of time, the consumption was reduced to	113,774	"
Amount saved	380,406	"

Case No. 5.

Where there was one hopper closet supplied, in twelve months it consumed	554,800	gallons.
By substituting one self-closing closet, for the same length of time, the consumption was reduced to . .	79,205	"
Amount saved	475,595	"

The result of the above five cases shows, in thirteen closets alone, a total saving of 3,249,739 gallons a year, or a daily saving of 685 gallons for each closet, at the same time affording all the needed service. In these cases meters are attached, and the water is doubtless shut off at night, showing, in part, that the great waste was in the working hours of the day. But for the meter, which compels the consumer to pay for all the water wasted as well as used, the estimate of loss above given would be more than doubled. Now, take the whole number of hopper closets, *i. e.*, 16,137, and assume what experience has shown to be within the actual fact, namely, that one closet in five is wasting water in the same ratio of the five cases cited, and the total waste will exhibit the amazing aggregate of 4,419,620 gallons in every twenty-four hours.

URINALS.

There are 2,152 public and private urinals located within the premises of water-takers; a very large proportion of this number are in manufactories, warehouses, stores and shops; they are constructed with no reference to economy in the use of water, having usually a constant flow of water by an one-eighth or one-half inch stream. It may be remarked here, that most of these urinals are constructed without reference to spreading the water over the surface of the bowl, thus allowing the salt of urine to collect, rendering the bowl nearly as filthy as if no water was used.

HAND-HOSE.

During the past summer there were 1,318 hand-hose in use by Cochituate water-takers; of this number 638 were upon premises containing from 5,000 feet to five acres of land in the Roxbury and Dorchester districts. The season was a dry one, and gardens and grass land were freely watered by hand-hose in a manner and to an extent never contemplated as a use for hand-hose; besides, the rate of charges is in no way commensurate for such service, nor should it be allowed, if paid for.

The following table will show approximately to what a vast extent the Cochituate water must have been used for irrigation (the rain-gauge is also set down). It will be observed by this table that for the four months when the call for domestic use is largely reduced by the absence of housekeepers, the quantity of water consumed was some fifteen millions of gallons greater than during the first four months of the same year, when the city's inhabitants are at home and full domestic requirement is needed, together with the larger waste in cold weather.

Daily average consumption of water in 1873.

Ten months.	Gallons.	Rain-fall.
January,	17,639,100	6.69
February,	18,461,000	3.74
March,	15,983,700	4.54
April,	14,781,800	3.81
May,	17,637,400	4.92
June,	20,100,550	.65
July,	20,917,100	3.25
August,	19,544,600	6.46
September,	19,572,700	2.78
October,	17,113,800	5.43

There are other descriptions of water-fixtures which are objectionable in view of the economical use of water, but the waste by them is inconsiderable in comparison to those which are detailed above, and these can be greatly improved by attention to the last, now to be given, cause of waste, namely,

CHEAP AND DEFECTIVE FIXTURES.

These include a class of fixtures denominated in trade contract work. In most low-priced houses, and it is not always confined to those, plumbing is put in to bear tolerable inspection at exposed or readily seen parts, while elsewhere, as under the floors and partitions, the workmanship and materials used are of the poorest description; inadequate to bear water-pressure, or the occurrences which constantly threaten. Leaks presently appear, increasing more and more; then follow temporary expedients to put off thorough renewals; all the while a constant loss of water goes on. To remedy this evil, a sort of inquisitorial inspection was established a few years ago, but it became annoying to housekeepers, and it has proved inadequate to remedy so great an evil. Inspection and remedy should begin at an earlier period; early enough to prevent altogether the introduction of every kind of fixture or plumbing work which, in the experience of the Water Board, is liable to create waste from any cause whatever.

In several large cities inspection is made at the beginning with the best results. The cities of New York, Brooklyn, Albany, Philadelphia, Chicago, St. Louis, and elsewhere, require that before a plumber shall perform any service in a building where city's water is to be used, he shall be duly licensed. Among the requirements for such license are, that the applicant shall be a citizen of the United States, 21 years of age; that he shall furnish satisfactory certificates from at least two licensed plumbers of his regular practical instruction in the business, and ought to be licensed; that a bond shall be required for faithful work; that no alteration or addition shall be made without notice to and consent of the respective water departments; that returns shall be made on the first of every month of work done calculated to increase or decrease the water-rate of the premises, also a return of all work put into newly-erected premises.

By means of such a comprehensive system, and to its rigid adherence which the system itself facilitates, water is not let on until all pipes, fixtures, and work, with their strength and arrangements, are approved. At this point the Registrar would respectfully say that, since the subject of waste in Cochituate water was first brought to the attention of the City Council by the Water Board in 1852, with similar mention in subsequent reports, he has made repeated attempts to do away with wasteful water-fixtures by recommending an increased rate of charge, but it was not the pleasure of the City Council to meet the subject in that form.

The total consumption of Cochituate water for the year 1872 was 5,498,141,000 gallons. Of this quantity 811,524,100 gallons was measured by meters. The question how much of the total supply was wasted cannot be accurately answered; but those best able to give an estimate set down the waste at a quantity equal to one-third of the whole supply.

The sale by meters does not entirely stop waste. This will appear by the annexed table, showing the consumption in the principal hotels by meter, and the amount shows little variation from what was used before meters were used. Manufactories would, doubtless, show the same fact. Hotels are taken, however, because their needed supply is more uniform. The table also exhibits the gain to the city pecuniarily by the use of meters. The whole number of meters now in use is 1,100, and it is owing to their introduction, even to this limited extent, that the increased revenue from the sales of water has come to pass. It is to be regretted that the cost of this (smaller size) meter, $35 to $40, should prevent its general application.

Hotel Consumption of Water for 1872 and previous Specific Rates.

	Daily Consumption in gallons.	Specific rates.	Meter rates.
Revere House	20,612	$571 00	$2,257 09
Parker House	28,579	440 00	3,129 46
American House	17,404	810 00	1,905 79
Adams House	7,498	354 00	821 07
Tremont House	18,600	475 00	2,039 66
United States Hotel	12,329	672 00	1,350 11
Marlboro Hotel	7,306	262 00	800 05
Young's Hotel	8,206	250 00	898 59
Quincy House	9,667	426 00	1,058 53
	. . . .	$4,260 00	$14,260 35

The above figures prove the policy and the just gain to the city in charging by meter measurement, rather than by valuation as now prevails in regard to dwelling-houses, whose supplies taken from taps distributed over a house for manifold conveniences, hot and cold water with a constant flow into the drain, are charged no more than for the moderate quantity carried by hand from the tap, as formerly from pumps. Like all other acommodations, water should be paid for according to the quantity used, either by meter measurement or estimate, according to circumstances.

There are important considerations in this subject of waste besides the cost of water. It is of the first consequence for the department to know, with as much approximation as the subject admits, the quantity of water needed for all ordinary purposes, and this can be got at with sufficient accuracy; but the quantity of water beside this, which will be wasted by the manifold ways and means for wasting, cannot be determined, even approximately. The reserve for large conflagrations cannot be calculated upon, but it must be provided. Another use is that for flushing the pipes, preventing improper accumulation therein, etc. Is it not wiser, then, to ascertain the legitimate need of the community from time to time, by stopping the opportunity to waste, rather than by large expenditures to seek to furnish all which can flow through the taps without looking as to the quantity required? These results can only be obtained by the introduction of the licensed plumbing system, and prescribing the quality and styles of water fixtures.

To illustrate the capricious (so to speak) uncertainty of waste, a comparison of the quantity of water consumed by similar departments of the city the past year will be quite pertinent. While all the institutions are suitably furnished with reference to good material and fixtures, helps to economy in the use of water, the police stations particularly should exhibit some degree of uniformity in their needs for water; but the facts are otherwise, and unaccountably so, for results prove that some pay proper regard to reasonable economy, while others do not.

Annual and Daily Consumption with Cost in some City Buildings for the year 1872.

	Daily Consumption.	Annual Consumption.	Amount paid.
City Hall	3,318	1,393,612	$418 08
Court House	12,212	4,454,684	1,336 40
City Hospital	27,063	9,878,106	2,963 43
Lunatic Hospital	9,195	3,356,301	1,006 89
House of Correction	20,413	7,450,950	2,235 28
Suffolk County Jail	4,570	1,668,059	500 41
Police Station No. 1.	1,311	478,687	143 60
" " 2.	762	278,223	83 46
" " 3.	1,791	654,000	196 20
" " 4.	764	278,595	83 57
" " 5.	817	318,925	95 67
" " 6.	489	178,815	53 64
" " 7.	1,494	545,616	163 68
" " 8.	488	178,290	53 48
" " 9.	327	120,428	36 12
" " 10.	839	306,598	91 97

There is one other important fact which deserves mention at this time. On July 20th, and October 5th, 1873, special observations were made, under the direction of the City Engineer, at Beacon Hill Reservoir, to determine the quantity of water used in a certain district of the city in the night, between the hours of one and three o'clock, A. M. (the data of each observation being on Sunday), and at a time when the consumption would be less than for any other two hours of the twenty-four.

The district observed upon was all that portion of the city north of Bedford, West, Park, Beacon and Charles streets, to the harbor and Charles river. The water was supplied exclusively from Beacon Hill Reservoir, with particular measurements made every fifteen minutes during the two hours. The result was as follows, viz., July 20th, 386,857 gallons were drawn in the aforesaid two hours, which is equal to 4,642,284 gallons for twenty-four hours.

A thorough inspection was at once instituted upon all water-fixtures in this district, and they were put in order. These repairs, renewals, etc., etc., were completed October 5th, when the second observation was made with the following result, to wit: Between the hours of one and three o'clock, A. M., October 5th, 336,294 gallons were drawn in the aforesaid two hours, which is equal to 4,035,528 for twenty-four hours; showing a difference in the quantity of water drawn between the two experiments of 606,756 gallons.

The quantity of water drawn for legitimate uses at a point of time when these observations was made, *i. e.*, between one and three o'clock Sunday night, must be very limited, consequently the proper and reasonable deduction to be made from these figures is this, that with all the painstaking of the Board, a thorough inspection of the fixtures within the district during the period of seventy-five days, reduced the waste to a very inconsiderable quantity, *i. e.*, 606,756 gallons or 13 per cent., leaving the balance, viz., 4,035,528 gallons or 87 per cent. of the quantity drawn to be accounted for in no other way than by the use of improper fittings, objectional styles of water-closets and urinals previously referred to.

In view of all considerations upon the subject of waste, I would respectfully suggest the following: —

First, that the Water Board obtain authority to regulate all fixtures, so that no class of fixtures shall be in use, nor material or work furnished, excepting such as the Water Board shall approve.

Secondly, that the use of the hand-hose be suspended until sufficient water could be afforded for their general use.

Thirdly, that hopper water-closets and urinals be either abolished or their character changed by substituting the self-closing faucet for the now objectionable fixture.

Fourthly, that the water-rate for other objectionable styles of water-fixtures be charged at a rate commensurate with the quantity of water used and required.

From a recent personal inspection of the system regulating the use of water in other large cities, I am clear in the opinion that economy will be greatly promoted and the duties of the Water Department be greatly facilitated towards the end desired, if the system of licensing plumbers, with such other regulations as have been presented under this head above, shall be established.

Respectfully submitted,

WM. F. DAVIS,

Water Registrar.

City Document.—No. 135.

CITY OF BOSTON.

REPORT

OF

COMMITTEE ON BATHING.

1873.

CITY OF BOSTON.

In Board of Aldermen, Dec. 29, 1873.

The Joint Standing Committee on Free Bathing Establishments beg leave to submit the following report: —

The appropriation made by the City Council to cover the expenses of this department for the financial year, 1873–74, amounted to $40,000. In May the following orders, authorizing the committee to make expenditures from their appropriation, were passed by the City Council and approved by the Mayor: —

Ordered, That the Committee on Bathing be authorized to repair and maintain free public bathing-houses for men and boys, and for women and girls, in different sections of the city, at an expense not exceeding $15,500; also to employ such assistance as may be required for the proper care and management of the several houses, at an expense not exceeding $18,000; said sums to be charged to the appropriation for Public Baths.

Ordered, That the Committee on Bathing be authorized to construct a suitable bathing-house for men and boys, to be located at Mt. Washington avenue bridge; the expense, not exceeding $4,000, to be charged to the appropriation for Public Baths.

The several establishments were opened on the first of June, the locations and regulations being as follows: —

LOCATIONS.

FOR MEN AND BOYS.

No. 1.—West Boston Bridge, foot of Cambridge street, under the charge of Alderman Gaffield.

No. 2.—Cragie's Bridge, foot of Leverett street, under the charge of Councilman Kingsley.

No. 3.—Charles River Bridge, near Causeway street, under the charge of Councilman Kingsley.

No. 5.—East Boston Sectional Dock, Border street, under the charge of Councilman Martin.

No. 7.—Federal Street Bridge, under the charge of Alderman Power.

No. 8.—Mt. Washington Avenue Bridge, near Federal street, under the charge of Alderman Power.

No. 10.—South Boston, foot of L street, Dorchester Bay, under the charge of Councilman Warren.

No. 11.—Dover Street, at South Pier, under the charge of Alderman Gaffield.

No. 13.—Boston Highlands, Cabot street, under the charge of Councilman Boardman.

No. 15.—Norfolk Avenue, under the charge of Councilman Whiston.

No. 16.—Dorchester, Commercial Point, under the charge of Councilman Martin.

No. 17.—East Boston, Maverick street, under the charge of Alderman Gibson.

FOR WOMEN AND GIRLS.

No. 4.—Warren Bridge and Causeway street, under the charge of Councilman Warren.

No. 6.—East Boston Sectional Dock, Border street, under the charge of Alderman Gibson.

No. 9.—South Boston, foot of Fifth street, under the charge of Alderman Power.

No. 12.—Dover Street, at South Pier, under the charge of Councilman Whiston.

No. 14.—Boston Highlands, Cabot street, under the charge of Councilman Boardman.

REGULATIONS.

The baths will be open daily, from June 1 to September 30, as follows: —

MALES.		FEMALES.	
Week Days . .	5 A. M. to 9 P. M.	Week Days . .	6 A. M. to 8 P. M.
Sundays . . .	5 A. M. to 9 A. M.	Sundays . . .	6 A. M. to 9 A. M.

All the bath-houses will be closed by the Superintendents at 10 o'clock, P. M., on week days, and at 9½ o'clock, A. M., on Sundays.

Each bather shall provide his own towels and soap. Female bathers will be required to furnish suitable bathing-dresses. Those desiring towels can obtain them of the Superintendent at three cents each.

Boys and girls under fifteen years of age shall not be admitted to the bathing-houses after 6 o'clock, P. M., and the decision of the Superintendent against admission shall be final.

Each Superintendent shall have full charge of his premises, and authority to withhold the facilities from all not conforming to these rules; and he will be required to render every assistance to applicants for baths, who, in case of insult or deprivation of privileges otherwise than as provided for in these rules, can appeal to the Chairman of the Bathing Committee.

No smoking, profanity, or noisy conversation will be allowed on the premises; and any person guilty of defacing the dressing-rooms, fences or tanks, by writing, marking or cutting, will be excluded from the baths, or arrested, according to the nature of the offence.

All questions of priority in bathing, or of use of dressing-rooms, must be referred to the Superintendent, whose decision shall be final.

A police officer will be in constant attendance, for the purpose of preserving order and enforcing these regulations, in concurrence with the Superintendent.

The committee trust that all bathers will conduct themselves with propriety and decorum.

Per order Committee on Bathing,
JAMES POWER,
Chairman.

Boston, June 1, 1873.

The following statements show the expense of maintaining each establishment during the year, and the number of bathers of each class: —

EXPENSES.

No. 1. — West Boston Bridge	$905 40
No. 2. — Cragie's Bridge	1,033 37
No. 3. — Charles River Bridge	1,175 41
No. 4. — Warren Bridge (female)	804 36
No. 5. — East Boston, Border Street	1,120 60
No. 6. — East Boston, Border Street (female)	1,120 59
No. 7. — Federal Street Bridge	840 07
No. 8. — Mt. Washington Avenue Bridge (rebuilt)	4,561 64
No. 9. — South Boston, foot of Fifth Street (female)	902 71
No. 10. — South Boston, foot of L Street	1,591 34
No. 11. — Dover Street Bridge	950 07
No. 12. — Dover Street Bridge (female)	950 06
No. 13. — Boston Highlands, Cabot Street	1,104 28
No. 14. — Boston Highlands, Cabot Street (female)	1,104 28
No. 15. — Norfolk Avenue	1,395 56
No. 16. — Dorchester, Commercial Street	916 93
No. 17. — East Boston, Maverick Street	764 90
General expenses for the twelve months	16,057 86
Total	$37,299 43

The average expense per bath for the season of 1873 was .026+
“ “ “ 1872 “ .026+
“ “ “ 1871 “ .026+
“ “ “ 1870 “ .015+

DETAILS OF THE BATHS.

Locality.	Superintendent.	June, 1873.					July, 1873.				
		Men.	Boys.	Women	Girls.	Total.	Men.	Boys.	Women	Girls.	Total.
No. 1. West Boston Bridge	P. L. Salmon	7.864	20,584	. . . .	. . . .	28.448	17,035	25,162	. . . .	. . . .	42,197
No. 2. Cragie's Bridge	Cyrus Bruce	5.247	34,686	. . . .	. . . .	39.933	7,322	41,586	. . . .	. . . .	48,908
No. 3. Charles River Bridge	Stephen L. Crimlisk	12,354	40,626	. . . .	. . . .	52 980	17,812	48,913	. . . .	. . . .	66,725
No. 4. Warren Bridge	Josephine T. Ballard	. . . .	. . . .	608	3,746	4.354	. . . .	. . . .	611	4,809	5,420
No. 5. East Boston, Border street	John McNamara	8,794	29,485	. . . .	. . . .	38.279	12,540	34,020	. . . .	. . . .	46.560
No. 6. East Boston, Border street	Rebecca Dalton	. . . .	. . . .	2,741	10,689	13,430	. . . .	. . . .	6,262	18,520	24.782
No. 7. Federal-st. Bridge	M. E. Brady	5,062	18,477	. . . .	. . . .	23 539	8.928	28,538	. . . .	. . . .	37.466
No. 8. Mt. Washington-avenue Bridge	Patrick I. Grace	2,076	2,685	. . . .	. . . .	4,760	18,665	32,342	. . . .	. . . .	51,007
No. 9. South Boston, foot of Fifth street	Clara T. Laha	. . . .	. . . .	729	1,094	1,823	. . . .	. . . .	5,475	9,649	15.124
No. 10. South Boston, foot of L street	Amos L. Poole	13.221	19,379	. . . .	. . . .	32,600	33,478	42,916	. . . .	. . . .	76,394
No. 11. Dover-street Bridge	Josiah W. Kenfield	5,953	18.631	. . . .	. . . .	24.584	7,132	19,980	. . . .	. . . .	27,112
No. 12. Dover-street Bridge	Mary Southard	. . . .	. . . .	990	13.455	14.445	. . . .	. . . .	2,117	15.935	18.0 2
No. 13. Boston Highlands, Cabot street	John Killion	6,100	27.517	. . . .	. . . .	33,617	6.471	34,578	. . . .	. . . .	41.049
No. 14. Boston Highlands, Cabot street	Harriet E. Crombie	. . . .	. . . .	174	1,734	1,908	. . . .	. . . .	2.435	7,703	10,138
No. 15. Norfolk avenue	George Whiston	4.046	14,979	. . . .	. . . .	19,025	2.541	23,582	. . . .	. . . .	26.123
No. 16. Dorchester, Commercial Point	James Martin	134	594	. . . .	. . . .	728	170	1.318	. . . .	. . . .	1,488
No. 17. East Boston, Maverick street	Charles E. Dodge	3.932	7,528	. . . .	. . . .	11,460	6.774	11,210	. . . .	. . . .	17.984
	Total Baths, 1873	74,783	235,171	5.242	30,718	345,914	138,868	344.145	16.900	56,616	556,529
	Total Baths, 1872	77,936	221,432	5,870	31.335	336.573	129.758	348 717	14,823	45,755	539,053
	Increase, 1873	. . . .	13,739	. . . .	. . . .	9,341	9,110	. . . .	2,077	10,861	17,476
	Decrease, 1873	3,153	. . . .	628	617	. . . .	. . . .	4,572	. . . .	. . . .	. . . .

DETAILS OF THE BATHS.

LOCALITY.	SUPERINTENDENT.	AUGUST, 1873.					SEPTEMBER, 1873.				
		Men.	Boys.	Women	Girls.	Total.	Men.	Boys.	Women	Girls.	Total.
No. 1. West Boston Bridge	P. L. Salmon	2,625	2,776	. . . .	. . . .	5,401	1,082	1,208	. . . .	. . . .	2,290
No. 2 Cragie's Bridge	Cyrus Bruce	4,420	35,816	. . . .	. . . .	40,236	371	4,517	. . . .	. . . .	4,888
No. 3. Charles River Bridge	Stephen L. Crimlisk	11,063	38,738	. . . .	. . . .	49,801	2,050	11,915	. . . .	. . . .	13,965
No. 4. Warren Bridge	Josephine T. Ballard	. . . .	. . . .	271	2,592	2,863	. . . .	. . . .	43	319	362
No. 5. East Boston, Border street	John McNamara	9,970	24,300	. . . .	. . . .	34,270	3,910	11,655	. . . .	. . . .	15,565
No. 6. East Boston, Border street	Rebecca Dalton	. . . .	. . . .	4,590	15,864	20,454	. . . .	. . . .	1,026	5,065	6,091
No. 7. Federal-st. Bridge	M. E. Brady	5,381	20,984	. . . .	. . . .	26,365	442	2,052	. . . .	. . . .	2,494
No. 8. Mt. Washington-avenue Bridge	Patrick I. Grace	9,921	26,829	. . . .	. . . .	36,750	2,801	10,134	. . . .	. . . .	10,935
No. 9. South Boston, foot of Fifth st.	Clara T. Laha	. . . .	. . . .	4,095	6,276	10,821	. . . .	. . . .	498	1,132	1,630
No. 10. South Boston, foot of L street	Amos L. Poole	28,427	38,406	. . . .	. . . .	66,833	7,673	9,142	. . . .	. . . .	16,815
No. 11. Dover-street Bridge	Josiah W. Kenfield	2,503	9,473	. . . .	. . . .	11,976	627	4,010	. . . .	. . . .	4,637
No. 12. Dover-street Bridge	Mary Southard	. . . .	. . . .	1,642	11,826	13,468	. . . .	. . . .	503	1,650	2,153
No. 13. Boston Highlands, Cabot street	John Killion	4,212	20,860	. . . .	. . . .	25,072	2,061	8,785	. . . .	. . . .	10,846
No. 14. Boston Highlands, Cabot street	Harriet E. Crombie	. . . .	. . . .	1,119	2,678	3,797	. . . .	. . . .	82	414	496
No. 15. Norfolk avenue	George Whiston	3,967	17,407	. . . .	. . . .	21,374	413	2,751	. . . .	. . . .	3,164
No. 16. Dorchester, Commercial Point	James Martin	215	1,808	. . . .	. . . .	2,023	127	500	. . . .	. . . .	627
No. 17. East Boston, Maverick street	Charles E. Dodge	4,796	7,880	. . . .	. . . .	12,676	1,431	2,914	. . . .	. . . .	4,345
	Total Baths, 1873	87,500	245,277	11,717	39,686	384,180	22,988	60,583	2,152	8,580	103,303
	Total Baths, 1872	115,313	362,143	16,480	43,106	537,042	25,771	67,450	4,250	8,983	106,454
	Increase, 1873	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	2,133	. . . .	. . . .	. . . .
	Decrease, 1873	27,813	116,866	4,763	3,420	152,862	2,783	. . . .	2,098	403	3,151

H. A. WILLARD, *General Superintendent.*

RECAPITULATION.

Total Baths at Bath House,		No. 1,	78,336
"	"	No. 2,	133,965
"	"	No. 3,	183,471
"	"	No. 4,	12,999
"	"	No. 5,	134,674
"	"	No. 6,	64,757
"	"	No. 7,	89,864
"	"	No. 8,	105,453
"	"	No. 9,	29,398
"	"	No. 10,	192,642
"	"	No. 11,	68,309
"	"	No. 12,	48,118
"	"	No. 13,	110,584
"	"	No. 14,	16,339
"	"	No. 15,	69,686
"	"	No. 16,	4,866
"	"	No. 17,	46,465
Total			1,389,926

	1873.	1872.
Whole number men bathers	324,139	348,778
" boy bathers	894,176	999,742
" women bathers	36,011	41,423
" girl bathers	135,600	129,179
	1,389,926	1,519,122
Decrease, 1873.		129,196

It should be understood that the expenditures given on page 6, are for the year beginning January 1st, and not for the financial year beginning May 1st. The appropriation made for the present financial year was $40,000, and the expenditure charged to that appropriation to Dec. 3d, amounts to $31,630.36, — leaving a balance of $8,369.64 to meet the expenses for the remainder of the year.

Respectfully submitted.

JAMES POWER,
THOS. GAFFIELD,
NEHEMIAH GIBSON,
DAVID WHISTON,
GEO. P. KINGSLEY,
JOHN B. MARTIN,
HALSEY J. BOARDMAN,
ALONZO WARREN,
Committee.

City Document.—No. 136.

CITY OF BOSTON.

REPORT OF COMMITTEE

ON

RAISING THE GRADES

OF

Suffolk-St., Church-St., Northampton-St. and Swett-St. Territories.

In Board of Aldermen, Dec. 22, 1873.

Laid on the table and ordered to be printed.

Attest: S. F. McCLEARY, *City Clerk.*

CITY OF BOSTON.

In Board of Aldermen, Dec. 22, 1873.

The Joint Special Committee on the Suffolk-street District beg leave to submit the following

REPORT.

The territory within the Suffolk-street District, so called (bounded by Washington, Tremont, Dover and Pleasant streets, and covering an area of about thirty-one acres), with the buildings and other fixtures thereon, were taken on the 13th of July, 1870, under the provisions of an act of the Legislature passed the 4th of June, 1868, for the purpose of abating the nuisance caused by impaired drainage.

The plan of improvement which was adopted provided for raising the grade of the lands, raising and underpinning the houses, widening and extending certain streets, relaying water-pipes, sewers and edgestones, and paving the streets and sidewalks. The total cost of the improvement was estimated at $2,351,550.

The work was begun in October, 1870, and completed, so far as raising the grade of the territory and raising and underpinning the houses were concerned, in 1872. Although the city held complete possession of the property, and could dispose of the whole or any portion of it as the public interests might seem to require, the former owners were notified that, in cases where their estates were not needed for public purposes, they would, upon the abatement of the nuisance, be reconveyed; payment being made to the city for betterments on account of widening or extending streets, for filling vacant lands, and for any extra work on the estates.

Those who were dissatisfied with the settlement proposed by the committee having charge of the work were required, under the act of the Legislature, to file a bill in equity in the Supreme Judicial Court. The time for joining in this bill expired on the 10th of September, 1872; and the Court then appointed, as provided by the act, three commissioners (William G. Russell, Daniel S. Richardson and William S. Dexter) to hear the parties and assess damages.

At the time your committee were appointed to take charge of the whole work there were one hundred and thirty-three estates remaining unsettled. In thirty-eight cases the parties in interest had entered suits in Court; in the other cases they failed to enter suits, relying upon the justice of the committee to grant them an equitable settlement. The cases in Court were disposed of as follows: —

Fourteen were withdrawn before trial, the committee's terms of settlement having been accepted; twenty-four were heard by the commissioners between the 24th of February and the 13th of April, in eighteen of which awards were made not varying materially from the terms of settlement which would have been made by the committee. In four cases no damages were awarded. Three cases were reported for the determination of the full Court. One of the number has since been abandoned, and the other two are pending on questions in which the city is not interested, as they affect only the distribution of the awards. Appeals from the commissioners' awards were taken in two cases in addition to those reported to the full Court, and trial by jury petitioned for, but the appeals were subsequently withdrawn.

Of the ninety-five cases not entered in Court final settlements have been made with all but fourteen, either by purchase or reconveyance. The following statement shows the condition of the unfinished business: —

Estate taken from Heirs of Ozias H. Mather, numbered 43 and 45 Chapman, and 48, 50 and 52 Middlesex street; to be reconveyed on the following terms: $1,000 allowed for passageway taken for estates fronting on Shawmut avenue; $1,875 charged for betterment; $149 for extra work, and the taxes for 1871–72–73.

Also estates taken from same, numbered 10 Osborn place; to be reconveyed on payment of $250, for betterment; $15.75 for clearing basement, and taxes for 1871–72–73.

Estate of Geo. A. Field, 31 Indiana place; to be reconveyed and $300 paid by city for damages. Taxes for 1871–72–73 to be paid by Field.

Estate of Thomas Fitzpatrick, 71 Emerald street; to be reconveyed on payment of taxes for 1871–72–73.

Estate of Joseph Kelley, 7 Osborn place; to be reconveyed without any charges.

Estate of Margaret Sancry, 17 Wheeler street; to be reconveyed without any charges.

Estate of Andrew J. Pierce, 484 and 486 Tremont street; to be reconveyed and $1,100 paid for damages by the city. Pierce to pay the taxes for 1871–72–73.

Estate of Isabella P. Hurll, 18 Dover street; to be reconveyed on payment of taxes for 1871–72–73.

Estate of Francis G. Whiston, 16 Garland street; to be reconveyed and $100 paid by the city for damages. Taxes for 1873 to be paid by Whiston.

Estates of Healy and Greenleaf, trustees, 101 Castle street, and 10 Orange street; part taken for widening Castle street; the remainder sold to the Boston & Albany Railroad Corporation; $13,000 awarded for both estates and accepted.

Estate of Martin Lennon, 4 Albion street; surrendered to the city and $7,000 awarded in payment. The award has been informally accepted, but the suit originally entered in Court has not been dismissed.

The following statement shows the total expenditures and receipts on account of the improvement, to Dec. 1, 1873 : —

EXPENDITURES.

For widening of Washington street,	$1,833 40	
" " " Carney place,	10,000,00	
" " and ext. of Wheeler court,	16,248 95	
" " of Castle street,	129,775 28	
" " of Emerald street,	4,180 00	
" " and ext. of Middlesex street,	54,916 99	
" " " of Suffolk street,	217,507 19	
Laying out of Cobb street,	41,300 00	
Extension of Shawmut avenue,	104,033 58	
		$579,795 39
For Sewers and Cesspools,		53,334 60
" Water Works,		22,157 89
" Plans and Printing,		1,690 48
" Office Expenses,		1,274 21
" Lamps and Lighting Streets,		2,707 11
" Repairing Buildings,		39,130 71
" Estates surrendered : —		
Total amount paid for Estates,	1,193,303 11	
Less amount for Widening and Extending Streets,	534,749 02	
		658,554 09
" Retaining Walls and Foundations,		10,162 92
" Damage by Fire,		1,084 66
" Expense of Sales,		8,423 35
" Clearing Basements,		1,406 36
" Incidentals (advertisings, steps, fences, crossings, sidewalks, removing night soil, etc.)		11,459 20
" Insurance,		5,449 09
" Expense of Committee,		3,842 12
" Raising and underpinning,		326,716 11
" Salaries, — Superintendents,	3,245 82	
" " Asst. Supts.,	8,450 00	
" " Book-keeper,	3,195 83	
" " Watchmen,	9,243 00	
" " Overseers,	1,140 00	
" " Messenger,	659 00	
		5,933 65

For Paving Streets,		118,371 14
" Taxes paid on acc't of Damage to Estates,		7,055 37
" Drains,		3,347 42
" Engineers and Expenses,		9,575 70
" Edgestones and Sidewalks,		5,036 75
" Moving Buildings and Building Foundations,		22,349 00
" Damages,		51,702 18
" Difference in exchange of 39 Village street, for No. 50 Orange street,	300 00	4,350 00
" Difference in exchange of 6 Lucas street, for No. 5 Kirkland street,	300 00	
" Difference in exchange of 12 Orange street, for No. 3 Indiana place,	3,250 00	
" Difference in exchange of 48 Orange street, for No. 7 Kirkland street,	500 00	
" Appraising, Estimating and Examining Titles,		12,900 00
Commissioners appointed by Supreme Court to adjudicate claims of Model Lodging House Association and others		4,000 00
For filling, Manuel & Haynes,	178,375 50	
" John Souther	42,712 52	
Teaming, including Grading Tremont street,	24,597 68	
		245,685 70
" Shawmut avenue bridge, etc.		
Clapp & Ballou, R. Wall,	43,215 98	
Colby & Trumbull, R. Wall,	30,395 71	
Colby & Trumbull, S. Abutment,	7,127 15	
Charles W. Parker, N. Abutment,	11,638 43	
G. W. & F. Smith, Bridge,	33,636 50	
Lumber and labor, Planking Bridge	246 23	
		126,260 00
		$2,363,756 10

Total amount appropriation,	$2,381,248 96
" expended,	2,363,756 10
Balance unexpended,	$17,492 86

RECEIPTS DECEMBER 1, 1873.

From sales of estates at public auction, ...	$617,944 53
" " " old buildings and materials, . . .	20,419 67
" rents, betterments, filling of land, etc., . .	145,162 42
	$783,526 62
Total amount of property held by the city	$483,650 23

A small additional appropriation will be needed to pay the damages awarded by the Court and the committee, viz.: —

Unpaid awards of committee, . . .	$22,275 00
For repairs, etc., estimated, ...	5,000 00
Total, ...	$27,275 00
Balance of appropriation, ...	17,492 86
Deficiency, ...	$9,782 14

It appears from the foregoing statement that the gross expenditures amounted to	$2,391,031 10
The receipts to	783,526 62
Net cost of improvement, ...	$1,607,504 48

The estimated cost was $2,351,550; by which it appears that the work has been done for $744,046 less than the estimates. The taxes have been assessed and paid on the property during the whole time it has been held by the city. In those cases in which the taxes were remitted in the settlement of damages with individuals, the amount has been charged to the appropriation for the improvement.

Soon after the property was taken, the owners, in compliance with the request of the committee having charge of the work, transferred their insurance policies to the city, with the understanding that, upon the reconveyance of the estate, the policies would be transferred. Most of these policies were issued from mutual offices; and in all those cases where the estates had been reconveyed and the policies had not been re-transferred when the great fire occurred, the city was held to pay the assessments and deposit notes. Where the estates had not been reconveyed the assessments were charged to the parties procuring the reconveyance. Notwithstanding this unlooked-for expense (amounting to $5,500) the transaction was not on the whole unfavorable to the city as a very large amount of property, for the preservation of which the city was responsible, was insured against loss from fire for a period of from two to three years.

For many years previous to the taking of this district by the city there had been no substantial increase in the valuation of real estate, on account of the bad drainage. The assessors' valuation in 1870, the year the improvement was begun, was about $5,000,000. A comparison of the valuation of that year with the valuation of the present one shows an increase of not less than one hundred and twenty-four per cent. It appears, therefore, that the increased income which the city will derive from this property, in the shape of taxes, will be sufficient to cover the interest on the cost of the improvement, and also to pay the principal in a very few years.

CHURCH-STREET DISTRICT.

Several estates on this district having remained unsettled since the taking in 1868, an order was passed by the City Council, March 28, 1873, giving this committee authority to settle, with the approval of the Mayor, upon such terms as they deemed best for the interests of the city. Two estates have been reconveyed (Wm. F. Tyler's, 45 Church street, and A. A. Hall's, 18 Piedmont street) by the committee; and damages have been assessed upon the city by a jury for two other estates (David Cobb's, 367 Tremont street and Mary A. Smith's, 45 Fayette street), which were not reconveyed. The suits in the case of the two last-mentioned estates were entered in 1869.

The total appropriations made on account of the improvements on this district amount to . .	$1,175,000 00
Expenditure to Jan. 1st, 1873, . .	1,152,142 22
Balance, ...	$22,857 78

The payments made during the year have been :—

On executions of Court, . . .	$22,029 94
Award of committee, ...	1,000 00
Total	$23,029 94
An award has been made by the committee in another case amounting to	500 00
	$23,529 94
Making a deficiency of	$672 16

There are two suits now pending in Court in which the parties claim compensation for work done on the property after it came into possession of the city. The claims are resisted by the City Solicitor.

NORTHAMPTON-STREET DISTRICT.

The City Council having been authorized by Chapter 340 of the Acts of the present year to order the owners of lands lying within the district bounded northwesterly by Washington street, southwesterly by Eustis street and Mall street, southeasterly by Albany street, and northeasterly by Northampton street, to raise the grade of their lands, so as to secure the complete drainage thereof, this committee were directed to make the necessary examination, and report what action should be taken thereunder. A careful inspection of the territory showed the necessity for applying the Act without delay, and, accordingly, orders were reported to the City Council, and passed, establishing the grade of the cellars, back yards, and vacant lots at twelve feet above mean low water, and notifying the owners (one hundred and four in number) to fill their several estates to the established grade, with good, clean gravel, earth or ashes. The notices were served on the first day of October last, and the act provides, that if the owners or any of them fail to comply with the order, within six months after the notice, the City Council shall raise the grade of the lands, all necessary expenses incurred thereby to constitute a lien upon the lands filled. The expense of raising the grade of all public and private streets and courts on the district is to be borne by the city.

As the city is in a position to do the whole work cheaper than it could be done by the individual owners, it is understood that the city is to go forward at the end of six months from the notice and raise the grade, charging the several owners for their proportional part of the expense. Those who are dissatisfied with the assessments may, within twelve months after they are laid, apply for a jury, or they may surrender their estates to the city. The City Surveyor is now engaged, under the direction of the committee, in preparing accurate surveys of the several estates, plans and profiles of the streets, and estimates of the cost of filling. These will be completed before the time arrives for beginning operations.

SWETT-STREET DISTRICT.

By an order of the City Council passed Nov. 11, 1873, the Committee on Suffolk-street District were requested to report whether any additional legislation was necessary to secure the raising of the territory bounded by Hampden street, Norfolk avenue, Magazine street, and Swett street, so that the grade thereof would correspond to the new grade established for the Northampton-street District. A large part of this territory (which covers an area of about fifty acres) is in the hands of two or three individuals who are desirous of having streets laid out, and the land raised to a suitable grade, as early as possible, so that they can proceed to erect dwelling-houses. They have expressed a willingness to convey to the city, free of expense, such of their lands as are required for streets, and also to pay for the cost of raising their lands to grade. As it will probably be necessary to cross this district in conveying earth to fill the Northampton-street District, the grade of the two districts can be raised at the same time, at much less expense than they could separately.

After hearing the principal owners, and making an examination of the district, the committee reported, November 25th, that if the Committee on Streets and the Street Commissioners should deem it expedient to lay out streets at this time over the district, it would be necessary to apply for additional legislation to secure the filling of the adjoining lands. That report is now in the hands of the Committee on Streets.

To meet the deficiencies in the appropriations for the Suffolk-street District and the Church-street District, as set forth in the reports on those districts, the committee would respectfully recommend the passage of the accompanying orders.

L. R. CUTTER,
JOHN BROWN,
SOLOMON B. STEBBINS,
WASHINGTON L. PRESCOTT,
ASA H. CATON,
CHARLES A. BURDITT,
JAMES F. MARSTON,
THOMAS BRENNAN,
Committee.

Ordered, That the Auditor of Accounts be authorized to transfer from the Reserved Fund a sum not exceeding ten thousand dollars, to be added to the appropriations heretofore made for the improvement of the Suffolk-street District.

Ordered, That the Auditor of Accounts be authorized to transfer from the Reserved Fund a sum not exceeding seven hundred dollars, to be added to the appropriations heretofore made for the improvement of the Church-street District.

City Document.— No. 137.

CITY OF BOSTON.

SECOND SEMI-ANNUAL REPORT

OF THE

Inspection of Prisons and Houses of Detention,

IN

SUFFOLK COUNTY,

FOR THE YEAR

1873.

CITY OF BOSTON.

In Board of Aldermen, January 1, 1874.

The Special Committee of the Board of Aldermen, who were appointed to inspect the prisons and houses of detention within the County of Suffolk, and make the examinations and reports required by the Statutes of the Commonwealth, beg leave to submit the following report: —

HOUSE OF CORRECTION.

The committee visited the House of Correction on the 18th December, 1873. At the previous inspection on the 17th June, there were in the institution: —

Males	447
Females	93
Total	540

Committed from June 18th to Dec. 18th, 1873, inclusive: —

Males	359
Females	50
Total	409

Discharged from June 18th to Dec. 18th, 1873, inclusive: —

Males	372
Females	78
Total	450

Remaining in the institution Dec. 18th, 1873 : —

Males	437
Females	62
Total	499

The offences for which the inmates have been committed are as follows : —

	Males.	Females.
Assault and battery	62	3
Larceny	52	10
Drunkenness	52	8
Larceny in a building	36	4
Unlawfully keeping for sale intoxicating liquors	25	
Larceny from the person	25	7
Breaking and entering a building with intent to steal therein	23	1
Assault	13	1
Obtaining property by false pretences	8	
Assault upon an officer	7	
Indecent exposure	4	
Maintaining a liquor nuisance	4	
Assault with a knife	4	
Breaking window-glass	3	
Adultery	3	3
Indecent assault	8	
Attempt to rescue a prisoner	3	
Forgery	3	
Robbery	3	2
Keeping a house of ill-fame		3
Driving a horse without right	2	
Idle and disorderly	2	1
Disturbing the peace	2	
Embezzlement	2	
Attempting to commit larceny from the person	2	1

	Males.	Females.
Uttering a forged instrument	2	
Assault with a pistol	2	
Vagrancy	1	1
Assault with intent to commit robbery	1	
Receiving stolen goods	1	2
Assault with a brick	1	
Larceny in a vessel	1	
Unlawfully escaping from jail	1	
Common drunkard		1
Assault with intent to murder	1	
Escaping from the House of Correction	1	
Open and gross lewdness		1
Cruelly torturing a dog	1	
Playing cards on the Lord's day		1
Illegal voting	1	
Trespass on realty	1	
Polygamy	1	
Total	359	50

The following named persons have been pardoned by the Governor: —

William Keating,	pardoned	July 8,	1873.
Walter J. Abbey,	"	" 15,	"
John F. Bagley,	"	Aug. 1,	"
John McGrath,	"	" 15,	"
John Welch,	"	" 29,	"
Christie Degan,	"	Nov. 1,	"
Patrick Doherty,	"	" 1,	"
Charles S. Harmon,	"	" 22,	"
John Stevenson,	"	Dec. 16,	"

There have been three deaths during the six months, namely: —

William Flynn,	died	Aug. 12,	1873.
William Chipsey	"	Nov. 23,	"
Patrick Flaherty	"	Dec. 17,	"

The following named persons have been transferred to Taunton Lunatic Hospital: —

Margaret Jones,	transferred	June	26,	1873.
Charles Johnson,	"	"	26,	"
John Curley,	"	Aug.	21,	"
Maurice Lomasney,	"	"	21,	"
John Farrell,	"	"	21,	"
Jane McClennan,	"	Dec.	3,	"
Michael McCarty,	"	"	3,	"
Edward McGloane,	"	"	3,	"

The following persons have been discharged by order of Municipal Court: —

Thomas Murphy,	discharged	June	19,	1873.
Michael Duff,	"	"	22,	"
Mary Eastman,	"	"	25,	"
Thomas Finnerty,	"	July	16,	"
Patrick Doyle,	"	"	16,	"
John Lord,	"	"	29,	"
Charles Johnson,	"	Aug.	13,	"
Matilda Brown,	"	"	19,	"
James Lew,	"	"	20,	"
Dennis Connor,	"	Sept.	4,	"
William Gilbert,	"	"	9,	"
Mary Richards,	"	"	9,	"
John H. Spear,	"	"	11,	"
George Washington,	"	Oct.	16,	"
Anthony Shone,	"	"	17,	"
Joseph Moran,	"	"	18,	"
Charles M. Hodges,	"	"	25,	"
Kerrin Shay,	"	"	31,	"
John O'Brien,	"	Nov.	15,	"
Joseph Hill,	"	"	20,	"
John Kelley,	"	"	22,	"

John Harrison,	discharged	Nov.	22,	1873.
James Hogan,	“	“	25,	“
James Cavanagh,	“	“	29,	“
Alfred Cook,	“	Dec.	8,	“

The following persons have paid fines and costs and been discharged : —

Minnie Nelson,	paid	June	19,	1873.
Mary Patterson,	“	“	19,	“
Jeremiah Sullivan,	“	July	15,	“
John C. Henry,	“	“	23,	“
William McGregor,	“	“	25,	“
William Armstrong,	“	“	29,	“
John Johnson,	“	Aug.	11,	“
John J. Maness,	“	“	11,	“
Thomas Brennan,	“	“	30,	“
John McKinnon,	“	Oct.	3,	“
Michael Cassady,	“	“	4,	“
Michael Lynch,	“	“	13,	“
Charles B. Hill,	“	“	16,	“
James McLaughlin,	“	“	21,	“
Martin Lyons,	“	Nov.	26,	“
Hugh Deuer,	“	“	27,	“
John O'Neil,	“	“	27,	“
Ralph Sidebottom,	“	Dec.	1,	“
James F. Reynolds,	“	“	16,	“
Michael Toomey,	“	“	16,	“

The following named persons have escaped : —

Ellen Young,	escaped	July	11,	1873.
James O'Brien,	“	“	12,	“
Frank Carroll,	“	Sept.	20,	“

RECAPITULATION.

Remaining, as per last Report		540
Committed from June 18th to Dec. 18th, 1873, inclusive		409
		949
Pardoned by the Governor	9	
Died	3	
Transferred to Lunatic Hospital	8	
Discharged by order of the Municipal Court	25	
Paid fine and costs	20	
Escaped	3	
Expiration of sentence	382	
		450
Remaining Dec. 18th, 1873		499

The males have been employed in making brushes and slippers, in running sewing machines, and as tailors, barbers, firemen, painters, bakers, carpenters, gardeners, etc. The females have been employed on contract work, and in making prison clothing, mending, knitting, washing, scrubbing, cooking, and as nurses, etc.

The health of the inmates has been good. But one prisoner occupies a cell. The punishments are deprivation of bed and solitary confinement. The discipline is good. At present there are 137 more male prisoners than there are cells to keep them in.

HOUSE OF INDUSTRY.

The committee visited the House of Industry at Deer Island on the 18th of December, 1873. The previous inspection was made August 4th.

The number in this institution at that date was	745
Number committed	2,515
	3,260
Number discharged	2,577
" remaining Dec. 18, 1873	683

Males, 434; Females, 249.

The causes of discharge have been as follows:—

By expiration of sentence	2,017
" payment of fines and costs	500
Pardoned by Directors	27
" " Court	23
Sent to Insane Asylum	2
Died	8
	2,577

The offences for which the prisoners were committed have been as follows:—

Drunkenness	2,124
Larceny	104
Common drunkard	96
Assault and battery	61
Vagabonds	35
Idle and disorderly	26
Common night-walkers	21
Maliciously breaking glass	12
Fornication	8
Maliciously injuring property	7
Disturbing the peace	5
Playing cards on the Lord's day	4
Driving away a horse without legal right	3
Lewd and lascivious	2
Common beggar	1

Keeping house of ill-fame	1
Unlawfully exercising the rights of a pilot	1
Obtaining goods by false pretences	1
Obstructing a street with a team	1
Illegal voting	1
Keeping a noisy and disorderly house	1
Total	2,515

HOUSE OF REFORMATION.

The House of Reformation at Deer Island was inspected on the same day. The number of prisoners received and discharged from August 5th to Dec. 18th, 1873, inclusive, was as follows: —

Number remaining August 4th, 1873	308
" committed	62
	370
Number discharged	86
Number remaining Dec. 18th, 1873	284

Boys, 258; Girls, 26.

The following are the offences for which the prisoners were committed: —

Juvenile vagabonds	25
Habitual truants	21
Larceny	8
Receiving stolen property	4
Stubbornness and disobedience	3
Idle and disorderly	1
Total	62

The causes of discharge were as follows : —

Expired sentence	60
Pardoned by Directors	25
Died	1
Total	86

LUNATIC HOSPITAL.

The committee visited the Lunatic Hospital at South Boston on the 18th of December, 1873.

There were in hospital June 17, 1873, the date of former inspection : —

Males	100	
Females	90	
		190
Admitted since : —		
Males	11	
Females	6	
		17
Under care during the term		207
Discharged : —		
Recovered	4	
Improved	1	
Not improved	3	
Died	7	
		15

Remaining Dec. 18, 1873, the day of the last inspection : —

Males	100	
Females	92	
		192

Names of deceased : — Joseph Wells, Aaron N. Hayter, Lettuce W. B. Proctor, Jesse Bradshaw, David Cummings, Warren Hartshorn and Ellen R. Domagh.

Causes of the deaths: — Exhaustion of Chronic Mania, 1; Paralysis, 1; Disease of Heart, 1; Old Age, 1; Pneumonia, 1; General Paralysis, 1; Consumption, 1.

The general health of the institution has been very good. There have been no signs of epidemic, no suicides, no accidents of any kind.

All the requirements of law have been faithfully observed, and proper attention has been given to cleanliness and ventilation.

SUFFOLK COUNTY JAIL.

The committe visited the Jail on the 18th of December, 1873.

At the date of the previous inspection, June 17, the number of prisoners was	164
The number of prisoners Dec. 18th was	185
The number committed between those dates was	1,748

Two deaths have occurred, namely: — Augustus Brown, committed from the Municipal Court, September 24, 1873, for further examination on a charge of larceny, too sick at the time of arrest for an examination, died October 2, 1873, of pneumonia; James M. Beckman, committed Oct. 10, 1873, from U. S. Court, bailed Oct. 16, 1873, recommitted Oct. 22, 1873, very sick with delirium tremens; was sent to the City Hospital, and died there Oct. 26, 1873.

The buildings and surroundings are in good order and condition.

There will soon be a necessity for additional accommodations to receive and keep prisoners; and the sheriff suggests that the most practical and economical method of furnishing them will be either by building an additional tier of cells in the upper part of each wing, thus providing forty-two more new rooms, or by the alteration of the west wing, and its use for prisoners.

In this connection the committee would call the attention of the government to the importance of providing accommodations for the female prisoners, separate and apart from those furnished to the male prisoners. Under the present arrangements the portion of the building occupied by the females is subject to observation from those passing along the corridors. The committee would recommend that the north wing be partitioned off for exclusive use by the female prisoners, and that they be waited upon by persons of their own sex. The present system of male oversight and attendance is degrading to the females, and should not be longer continued.

Respectfully submitted,

NEHEMIAH GIBSON,
HIRAM EMERY,
ALANSON BIGELOW,
Committee.

ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF BOSTON.

1872.

BOSTON:
PRESS OF ROCKWELL & CHURCHILL,
122 Washington Street.
1873.

CITY OF BOSTON.

In School Committee, September 10, 1872.

Messrs. Means, Sanford, Hobbs, Learnard, Fennelly, Ricker, Connor and Noble, were appointed the Committee to prepare the Annual Report of the School Committee.

Attest:

BARNARD CAPEN,

Secretary.

In School Committee, Feb. 11, 1873.

The President appointed Mr. James Reed upon the Committee to prepare the Annual Report of the School Committee, in place of Mr. Means, who declined serving.

Attest:

BARNARD CAPEN,

Secretary.

REPORT.

It has long been the custom of the School Committee of Boston to prepare, for the information of the citizens, an annual report relating to the important interests entrusted to their charge. This report is made in accordance with a standing rule of the Board, from which we quote as follows: —

> "The Committee on the Latin School, the English High School, the Girls' High and Normal School, the Roxbury and the Dorchester High Schools, and each District Committee, shall, during the month of July, make a thorough examination of their respective schools, and report at the quarterly meeting in September, the results, with any suggestions they may consider valuable.
>
> "The reports of these Committees shall be referred to a special Committee of the Board, appointed at the meeting in September, who shall make from them such selections, and shall add thereto such suggestions and remarks, as they may deem expedient. There shall be published with the Annual Report the reports of the Committees on the High Schools, of the Superintendent of Schools, of the Committee on Music, and of the Committee on Drawing, and such other reports as said Special Committee may deem advisable."

DELAY IN APPOINTING THE COMMITTEE.

In conformity with the above regulations, the undersigned have the honor of submitting their report. They consider it, however, simply justice to themselves, to state, that owing to unusual and accidental circumstances, the committee, which should have been ready to commence its labors in September, 1872, was not fully appointed and organized until February, 1873. Hence they have felt the prime necessity of preparing their report with as little delay as possible, and will, therefore, confine themselves, in the main, to a general statement of the work done by the Board during the year, and a brief presentation of the most prominent topics which it has recently had under consideration.

SUPERINTENDENT'S REPORTS.

This course seems the more appropriate on account of the very full and interesting reports of the Superintendent, printed herewith, to which we invite particular attention. It will be seen that they present many matters in detail, to which we refer, if at all, only in the most general terms.

GENERAL STATISTICS.

From these reports it appears that the number of pupils in all the Public Schools of the city is 38,688, showing a slight increase over the total of the previous year. These pupils are in charge of 1,001 teachers (147 male, 854 female). The above aggregates include 2,072 pupils and 95 teachers, who belong to the evening schools; leaving 36,234 pupils and 906 teachers connected with the day schools alone. Instruction is given in 103 school-houses, containing about 870 different rooms. The average whole number of pupils to a teacher is between 38 and 39.

The whole amount paid in salaries to teachers was $863,658.51, or an average of about $863.00 per teacher. The average cost per year for each pupil in the day schools was, for tuition, $23.83; for all items, including school-houses and lots, care of buildings, school apparatus, etc., $33.57.

These figures show more plainly than any words can do the magnitude of the educational work of the city, and the responsibilities of the School Board. To provide suitably for the mental, and, so far as may be, for the moral training of nearly forty thousand children, is the great duty for the performance of which we are accountable to our fellow-citizens. The amount of money expended should not seem large, in consideration of the objects in view. Nor can it ever be smaller than at present. Not only the growth of the city, but the increase of general culture, and the demand for new branches and methods of instruction, forbid us to expect any diminution of our educational appliances, or of the expenditures to which they give rise.

NEW NORMAL SCHOOL.

In looking over the proceedings of the Board for the past year, we find few matters which seem to call for special notice. The most important change which has been made is the establishment of a separate Normal school for girls. The school which was at first the Girls' Normal School, afterwards the Girls'

High and Normal School, has finally become the Girls' High School. For some years it has been growing more and more evident that this result would ultimately be reached. The number of girls wishing to become teachers does not comprise nearly all of those who desire a High School education. Experience has proved that both objects cannot be effected in the same school without some loss to the one or the other. At the same time, it seems highly important that the city of Boston should not abandon the practice, so successfully tried in the past, of giving the requisite instruction to those daughters of her citizens who wish to make teaching their profession.

In accordance with these views, a new Normal School for girls has been established. It is open to all who can present a certificate of graduation in any of our High Schools, or can pass a satisfactory examination in the usual High School studies. It was begun in September, 1872, under the charge of Larkin Dunton, as head-master, having for his assistants several ladies who have proved their eminent ability in the training department of the Girls' High and Normal School. Over fifty pupils were received. The school, at present, has its quarters in the beautiful building in Newton street, where the High School also, under the direction of Dr. Eliot, its newly appointed principal, gives promise of increased usefulness and prosperity.

REORGANIZATION OF THE DORCHESTER DISTRICT.

Another change which has been made during the year has been the rearrangement of the Dorchester schools, so as to bring them into fuller accord with the Boston system. Heretofore, the seven Grammar schools of the sixteenth ward have been comprised within a single district, under the control of one committee, called the Dorchester District Committee. As now reorganized, each of these schools gives its name to a Grammar School section, having its own local committee, according to the custom prevailing in other parts of the city.

NEW BUILDING FOR THE LATIN AND ENGLISH HIGH SCHOOLS.

The need of a new building for the Latin and English High Schools has long been felt by this Board. For several years the accommodations in the old school-house in Bedford street have been wholly inadequate; so that it has been found necessary to obtain rooms elsewhere for many of the classes. The committee are happy to state that orders passed by the Board have been so far favorably regarded by the City Council, as to result in the purchase of a most eligible site for this purpose. It is in the square bounded by Clarendon street, Warren avenue, Dartmouth and Montgomery streets. For general advantages of location, this lot could hardly be surpassed. It is much to be hoped, that no short-sighted policy will prevent the purchase, at the present time, of all the land which may be required for many years to come, by the growing wants of these institutions.

DEFECTS IN OUR SCHOOL SYSTEM.

While the committee feel that there is much cause for congratulation in the general good condition of our schools, they are not blind to their deficiencies, nor to the many opportunities which they offer for improvement. In this progressive age, the man or the community that does not constantly press forward must needs fall behind in the race. Already some of our sister cities are setting us an example, in matters relating to the management of schools, which it is not wise for us to disregard. The chief defects in our school system, as at present administered, arise, in our opinion, from the inadequate provisions which exist for the examinations of schools and teachers.

EXAMINATION OF SCHOOLS.

Years ago, when the city and the School Board were both much smaller than they are now, a special committee of the Board was annually appointed to examine the various schools, to compare them with each other, and to report the results of their investigations. In the present condition of affairs, no committee could be expected to perform this laborious service. Nor is it possible for the Superintendent, with the many and various duties which occupy his time, to conduct any such detailed examinations. The city at present contains nearly sixteen square miles of territory. According to the statistics given above, in order to examine all the schools, it would be necessary to visit 870 different rooms. The quarterly examinations, which are, by the rules of the Board, required to be made by the committees of the several High and District Schools, while answering a good purpose, are yet conducted by different persons, who are without the opportunity of comparing the various schools with each other. Their efforts, therefore, are entirely disconnected, and produce no impression which is felt by the schools as a whole. The consequence is that we have a vast number of fragmentary and extremely unequal reports, from which it is impossible to draw any general conclusions. It is very desirable that greater unity should exist in our system of schools, as regards the modes of instruction and the standard of scholarship. The valuable experience of one school should belong to the whole. Whatever methods of instruction or discipline are found to be particularly useful in one district should not wait long before being communicated to the others. The separate parts, each with many excellences of its own, are suffering for the want of being brought together in closer union.

ASSISTANT SUPERINTENDENTS.

It seems altogether certain that no systematic examinations of all the schools can be made under the present regulations of the Board. Officers are needed for that special purpose. In this respect the city of New York is in advance of our own. The general work of school examination is there committed to five superintendents, who receive liberal salaries, and are generally selected from among the successful teachers of the city. We believe that the adoption of a similar plan in Boston would be immediately productive of good results, which would be seen in the improved working of our entire school system.

EXAMINATION OF TEACHERS.

How to secure a more thorough and systematic examination of teachers is another question, which is regarded with deep interest by many members of the School Board. There can be little doubt that our present method, or rather want of method, admits of great improvement. The utter lack of uniformity in the modes by which teachers are selected, and the absence of any fixed standard of measuring their qualifications, cannot fail to produce much confusion in various ways. Fortunate in the possession of many admirable teachers, it cannot be doubted that the city would be far better off as regards this class of servants, if certain definite rules, clearly intelligible to every one, had been consistently observed in their appointment. There is no reason why a community so munificent in all matters pertaining to education, should not always be able to obtain the very best talent in its instructors.

The Superintendent, in his twenty-fourth report, published herewith, makes many valuable suggestions on this point. He says: "We need better regulations in respect to the examination of teachers. In this respect, instead of making progress, we have lost ground. Ten or twelve years ago candidates were seldom elected without having passed an examination.

. . . . . Latterly teachers have in most cases been appointed without an examination. I am fully persuaded that the best interests of our schools demand a reform in this respect. . . . . What is needed especially is a fair chance for competition. And how can there be a fair chance for competition so long as there are no examinations open to all comers? . . . . . We want teachers who combine tact and technical skill with good scholarship. The choice should not be between tact without scholarship, and scholarship without tact. We should, in the first place, exclude all candidates who have not good scholarship, and, I should say, very good scholarship, no matter how much tact they may have, and then from the good scholars select those who show the most tact. Teachers who are not good scholars do not wear well. They are not likely to improve. They become more and more mechanical in their teaching."

But, not to quote further from a document to which any one may turn who reads this report, we wish to subscribe heartily to the sentiments therein contained, and to express the hope that before any long time shall have elapsed, means may be devised for carrying them out to some practical issue. The "pedestrian competition," to which the Superintendent humorously alludes in another part of his report, is certainly unworthy of further encouragement. Nearly all the other large cities of the Union subject their teachers to the test of a strict examination, and with apparently good results. If Boston is to maintain her present position in educational matters, she cannot afford to be negligent or careless with respect to the attainments of those whom she chooses as the instructors of her children.

CO-OPERATION BETWEEN THE HIGH AND GRAMMAR SCHOOLS.

The programme according to which, a few years since, the studies of the Grammar and Primary Schools were strictly graded and classified, has proved an entire success, so far as those schools are concerned. It is to be regretted, however, that between the Grammar and High Schools there is not the perfect co-operation which might be desired. Especially is this the case with the schools for boys. The child passes easily and naturally from the Primary to the Grammar School, under the surveillance of the master of the district; but when he reaches the higher Grammar School classes, he is not so readily suffered to depart by the same master. The consequence is that the average age of boys admitted to the English High School is nearly fifteen years, instead of twelve, which is the age indicated in the regulations. Whatever the cause may be, — whether the masters like to retain as long as possible the boys who do credit to their schools, or are over-solicitous that they should pass the High School examinations with special honor, — whether the boys themselves are held back by needlessly slow promotions, or suffer from association with companions who have no intention of going beyond the Grammar School course, — the fact remains, that they are not sufficiently aided and encouraged to enter the High Schools at an early period. No one conversant with the subject can doubt that here is an abuse to which some corrective needs to be vigorously applied. We will not enlarge upon a matter which was ably and elaborately discussed in the report of last year; but will simply suggest that one good work which might be done by assistant superintendents, if they should be appointed, would be to examine and readjust our school machinery at the point of contact between the High and Grammar Schools.

INDUSTRIAL EDUCATION.

The attention of the Board has been called repeatedly to the subject of Industrial Education. It can hardly be doubted that the time is near at hand, when free instruction in the mechanic arts and other industrial pursuits will be given to all who desire it, just as it is now given in drawing, music, and, to a limited extent, in needle-work. The question is, how and where to make a beginning. A report on this subject, in the appendix of this volume, contains the very practical suggestion that instruction in the cutting and making of garments might be immediately commenced in our girls' schools. We cannot believe that this important matter will be permitted to rest for any great length of time without further consideration and action.

ACCOMPANYING DOCUMENTS.

Many topics press themselves upon our notice, which it would be pleasant, and perhaps profitable, to discuss. But adhering to our purpose of simply mentioning the most important matters which are actually engaging the attention of the Board, we forbear to speak of them. We will merely refer the reader to the reports on the High Schools, on Music, and on Drawing, and to the various other documents contained in this volume.

CONCLUDING REMARKS.

It is but a truism to say that the work of educating the children of a nation, or even of a city, is important beyond the power of man to estimate. No efforts in this direction, if they are wisely made, can be too great, in consideration of the objects to be attained. In the tender and impressible period of childhood are laid the foundations of character. What the mind receives at that early age remains, with its influence for good or evil, through all the subsequent life. The end is beyond this world. If, as Wordsworth says, "The child is father of the man," then the man is father of the angel. Our work is not merely to train up substantial and prosperous citizens; we are communicating some of their strongest and most lasting impressions to immortal souls. Gradually the mind is unfolded from without inwards, — from the condition of the infant when the use of his senses is first acquired by him, to deeper and ever deeper possibilities of love and thought. Education is good, in proportion as it tends to goodness, — reaching beyond knowledge, beyond worldly success, beyond the coveted prizes of this life, — to purity of heart, and the peace which passeth understanding.

JAMES REED, *Chairman*,
BAYLIES SANFORD,
GEORGE M. HOBBS,
WILLIAM H. LEARNARD, JR.,
RICHARD J. FENELLY,
CHRISTOPHER A. CONNOR,
GEORGE D. RICKER,
JOHN NOBLE.

REPORTS

OF THE

COMMITTEES ON THE HIGH SCHOOLS,

FOR THE

School Year Ending August 31, 1872.

LATIN SCHOOL.

The number of pupils in this school the past year was two hundred and seven. Average attendance, one hundred and ninety-five. Percent of attendance ninety-four. Diplomas were awarded to eighteen. Four others were members of the school for the greater part of the year, but as they left before its close, they received no diplomas. Eleven received the Franklin medal.

Of the eighteen who received diplomas, fifteen entered Harvard University, two are pursuing studies elsewhere, and one has gone into business.

The school experienced a loss in the resignation of Mr. Wm. T. Reid, whose success as a teacher had been very gratifying to the Committee. He resigned his situation, to accept the office of Superintendent of Schools, at Brookline, Mass.

It is more than ever apparent that better accommodations should be provided for this school. The portion of the building assigned to it in Bedford street is too small, and two classes are colonized in the school-house on Harrison avenue. The rapid advance of business in its vicinity, will very soon render the building entirely unsuitable for school purposes.

Great as is the acknowledged importance of the instruction given in the Grammar Schools, the credit of the city is at least equally involved in the maintenance of successful schools of a higher order. It is not difficult to show that in this success every class of the community has an almost equal interest.

The number of boys in this city who are now seeking exactly that kind of training which this school aims to give, was probably never larger than at present. Nor is there, as many persons imagine, any such antagonism between the purposes of this school, and those of the English High School, that the prosperity of the one would imply a decline of the other in general favor. These two schools represent equivalent, but differing plans of study, adapted to the diverse aims of two classes of students, existing of necessity in every community.

Within the last two years, important changes have been made in the curriculum of studies pursued in the Latin School, and it may not be unprofitable briefly to refer to them. Till the year 1870, the college at Cambridge ably supplemented the school course. The classical authors omitted in the Latin School were studied at college, while a large and generous instruction in other branches redeemed, to a considerable extent, the deficiencies of the school plan. At twenty years, Boston boys had accomplished, at school and college, very nearly what boys of the same age in other countries ordinarily attain. The school, as thus existing, formed the lower half of what would be called a school in those countries, while the college remained the upper half; an upper school, too, with which any community might well be more than content.

When, four years ago, in consequence of the improvements made at Cambridge, the requirements for admission were advanced, and, as a result, the age of boys entering college from Boston was altered from sixteen years to eighteen or nineteen, while the average age of graduation became twenty-two, new difficulties presented themselves.

The parents of boys who had been kept till eighteen years, or nineteen, under training, would not unnaturally feel, that, at that time, the elementary instruction of their children ought to be nearly, or quite completed. Moreover, many families, willing and able to give their sons a full education, would probably be compelled to hesitate if such a training must go on to the age of twenty-two years or more. Again, if the whole period of study, preparatory and professional, were rightly to last till twenty-five, it might be matter of doubt, whether the greater number of students would not wisely elect to give to the studies of their calling, rather than to general culture, the years from twenty to twenty-two.

Under these circumstances, a radical change in the course of study was planned. It is not here necessary to repeat the details of the scheme. It was intended to keep the school in the future, what it had been in the past, strictly a school; in no sense to attempt to rival the college, or to supplant it. The boys were to remain under school discipline. The list of Latin and Greek authors to be studied was enlarged. The study of English writers and of the

English tongue became obligatory. Attempt was made to remedy the various deficiencies in the course of study which have been mentioned. In the hope of attracting to the school able teachers, the School Board largely increased the pay of the under-teachers. Provision was made for relieving the school from the burden of boys who had proved themselves hopelessly idle and incompetent. The head-master was required frequently to examine the several rooms, and his powers were in other respects enlarged.

To make these changes more effective, two additional teachers were given to the school. These instructors were not called to teach either Latin or Greek. They were not responsible for the discipline of the school. It was hoped that the presence of these teachers would make certain the introduction of the new studies, the need of which had been so deeply felt.

The anomalous position of these teachers, however, proved a source of annoyance; and after a trial of eighteen months, this feature of the plan was, by general consent, abandoned; all the under-masters of the school being placed from that time on a footing of equal authority, while it was decided that hereafter, the instruction in the school shall be strictly departmental; history to be taught by the instructor of history alone, mathematics by the mathematical teacher, or teachers, and so on, through all the subjects of study.

An obstacle to the success of the school has been found to exist in the fact, that teachers of promise, whose services it was important to secure for the school, have in several instances preferred the work and rank of professor, in small and distant colleges, at half the income offered by the city. If the present plan of the school is to be maintained, it might perhaps be possible to obtain from some authorized source, the title of professor, or some equivalent honor, for its more distinguished teachers. In numberless instances the more eminent German scholars have been found teaching in the schools, rather than at the universities. It must, however, be acknowledged, that New England teachers will in many cases prefer the control of their work by their own profession, which is established in colleges, to that of large and loosely constituted School Committees in cities and towns.

Whenever it may become necessary to choose a new head-master for this school, the difficulty of selecting a suitable man will be very great. In such a school, the key to the success of the whole system lies in the choice of a head-master of commanding ability. Everything in the complicated mechanism of the school should be controlled by his hand.

The sum offered for the services of a head-master is by some considered extravagant. Yet suburban towns in this neighborhood already give nearly as much. In Roxbury the teacher of an endowed school, containing half our number of boys, is more liberally paid, and any man possessing the requisite qualifications for the position of our head-master can earn more than twice the sum which we offer, by opening a private school in this city. The difficulty felt at this moment in finding any desirable candidate for the kindred great schools of Andover and Exeter well illustrates the point in hand.

Hardly any other cause has more interfered with the success of the school than the character of the material presented for admission. The refuse of other schools, public and private, has been offered. Side by side, boys well prepared, and those hardly prepared at all, have entered its classes. Valuable time is thus constantly wasted in the effort to atone for earlier neglect. The class of boys who should be expected to fill this school do not now attend any public school. Were the Latin School allowed to establish preparatory classes for boys of eight years, the difficulty under consideration would be completely mastered, and at the same time the public schools of the city would receive a reinforcement which would in many ways tell upon the success of the whole system.

It is a matter of question, whether the plan of daily marks for school work, generally practised, may not well be given up. This custom demands in every room minutes which should not be spared from teaching. The monthly returns which follow it, form to many valuable teachers a most annoying addition to their work; while to the boys it is a constant temptation to cheating and unfairness, furnishing at the same time a standard of merit which is probably often extremely deceptive.

In one of the cities of the United States the use of text-books by teachers has been forbidden; only a memorandum of heads of matters to be taught being left in his or her hands. Inapplicable as this rule is in the study of an ancient classic, its adoption in all other departments would constitute a memorable advance in the art of teaching among us.

The unfortunate change by which the afternoon session of the school was several years ago given up continues in force. After three hours of school work the boys are jaded and tired, and if allowed to make trial of the former arrangement of hours would soon show the invigorating effect of the old three hours' intermission. What can the city expect in temper or ability from a teacher, who daily, after a hurried breakfast at half-past six, comes to town without again taking a meal till three in the afternoon? Probably no desirable reform in the arrangement of the school would provoke such determined resistance from both boys and parents as a return to the wise plan of three o'clock afternoon school; and yet hardly any other change is so imperatively demanded for the health and progress of the boys. The single argument by which the present hours are defended, that a small minority of boys would find it hard to reach home in the interval, finds its sufficient answer in the proposal of the Institute of Technology to furnish for its students, so placed, dinner at cost,—a step which the city might far better imitate than to persevere in the present disastrous plan of crowding into one-half of the day all school labor.

The consideration of the last-mentioned difficulty suggests that obstacle which more than all others embarrasses the Latin School, the want of hearty and efficient support from the parents of the boys. Here lies the real trial of the school. Were the high value of the education offered cheerfully recognized at home;

were it felt there that to accomplish this end, idle amusements and desultory reading must be resolutely put away; we should not, on the one hand, hear boys unblushingly excuse neglect of a lesson, "because they went to a party;" or, on the other, see the editor of our leading daily journal advise that young men should gain all the rudiments of a noble education in five hours a day of school recitation and study, without any labor at home.

Respectfully submitted.

HENRY S. WASHBURN,

Chairman.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE LATIN SCHOOL, SEPTEMBER, 1872.

HEAD-MASTER.

FRANCIS GARDNER.

MASTERS.

AUGUSTINE M. GAY,
MOSES MERRILL,
GEORGE W. PIERCE,
JOSIAH G. DEARBORN,
AUGUSTUS H. BUCK,
GEORGE W. MINNS,
JOHN S. WHITE, JR.
CHARLES J. CAPEN,
JOSEPH W. CHADWICK.

INSTRUCTOR IN FRENCH.

PROSPÈRE MORAND.

INSTRUCTOR IN DRAWING.

CHARLES A. BARRY.

INSTRUCTOR IN MUSIC.

JULIUS EICHBERG.

INSTRUCTOR IN MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

FIRST CLASS.

Bell, William Macpherson
Bowser, Alexander Thomas
Brett, John Quincy Adams
Campbell, Newell Rogers
Cheney, James Loring
Currier, Charles Gilman
Cushing, Hayward Warren
Cutler, Frederick Waldo
Cutler, Walter Marshall
Cutter, Edward Jones
Denny, Arthur Briggs
Dunham, Howard Cary
Fulton, Frank Edward
Grover, Preston Herbert
Hudson, Henry Bright
Litchfield, William Harvey
Morse, Edward Leland
Pierce, Matthew Vassar
Pierce, Quincy
Rollins, Frank Waldron
Russell, Walter Herbert
Sherman, Addison Monroe
Sherman, Thomas Foster
Walker, James Wise
Young, Reginald Heber

SECOND CLASS.

Allen, Willis Boyd
Andrews, Willie Edward
Crowley, James Linus

Dana, Francis
Eaton, Harold Bayard
Gay, Frederick Lewis
Grant, Patrick
Jaques, Herbert
Lodge, Richard Walley
McMichael, Willis Brooks
Meinrath, Joseph
Miller, Charles Edward
Mitchell, John Singleton
Murray, Theodore Randolph
Nickerson, Frederic Obed
O'Dowd, John
Power, David Ewin
Ross, George Whiting
Russell, Thomas
Simmons, Thornton Howard
Sparrell, Rufus Edwin
Stackpole, Edward
Tappan, Herbert
Thayer, Frank Bartlett
Tower, David Bates
Vinton, Charles Henry
Wheeler, Henry

THIRD CLASS.

Archibald, Blowers
Bowen, John Templeton
Chandler, Frederick Emerson
Churchill, John Maitland Brewer
Coolidge, William Williamson
Codman, William
Davis, Frederick Sumner
Delano, Samuel
Dillenback, Hiram Irving
Dunham, Harry
Everett, Edward
Fenno, Lawrence Carteret
Hanson, William Greene
Hastings, Edward Rogers
Hayden, Edward Everett
Hooper, Arthur
Jordan, Eben Dyer
Kelley, Webster
Lincoln, Charles Sprague
Merrill, George White
Mitchell, James William
Newton, Edward Wood
Pasco, Lewis Albert
Patten, Frank Bartlett
Perry, Frederick Gardner
Roche, Patrick Joseph
Sanders, Orren Burnham
Somerby, Samuel Ellsworth
Stearns, Edwin
West, William Badger

FOURTH CLASS.

Andrews, Clement Walker
Davy, Charles Lewis
Hayes, Arthur Clarence
Hunt, Edward Browne
Miller, George Stow
Morris, John Gavin
Nunn, Charles Peirce
Tebbetts, John Sever
Wade, Robert Stowe

FIFTH CLASS.

Alger, Philip Rounseville
Bailey, Louis Andrew
Barstow, Henry Taylor
Bates, Frank Prosper
Bates, Lewis Palmer
Buckley, Philip Townsend
Bush, Walter Murray
Butterworth, Frank Albert
Casey, Thomas Bernard
Clark, Louis Monroe
Devine, James Luke
Fales, Willard
Farwell, Parris Thaxter
Fraser, Donald Allen
Frost, Edwin Thomas
Frost, Charles Ballou
George, Alvin
Hastings, John King
Hawes, Edward Southworth
Hodges, George Clarendon

Hodges, Henry Foot
Holder, Frederic Blake
Lane, Charles Stoddard
Mansfield, Lott
Means, Charles Johnson
Millerick, Daniel Edward
Milliken, Arthur Norris
Morse, Jacob
Morse, Warren
Mullen, Frank
Norman, William Mellow
Pfaff, Charles
Phinney, George Alcott
Pierce, Frank Wheeler
Reynolds, John
Roche, John Andrew
Ruffin, Hubert St. Pierre
Savage, John Henry
Shea, John Joseph
Sears, George Gray
Smith, Hamilton Sutton
Smith, Walter Allen
Somes, William Wyman
Sonrel, Louis Agassiz
Stevens, William Stanford
Strong, George Alexander
Thayer, Henry James
Tilton, Joseph Brown
Warren, Charles Everett
Wells, Charles Luke
White, Charles Addison
Wilde, George Cobb
Worcester, Theodore
Young, Sanford Edmund

SIXTH CLASS.

Currier, George Warren
Hayes, Charles Edmund
Kinney, Henry Nason
Mills, Isaac Barney
Nickerson, Herbert Goodridge
O'Connor, George Bernard
Robinson, Edward Abbot
Robinson, Edward
Sargent, Henry Rufus
Stimpson, Theodore Fiske
Trull, Larkin
Walters, John Forrest
Ward, Langdon Lauriston
Warren, Franklin Cooley
Yenetchi, Henry Ainsworth

Abbe, Alan Joseph
Authes, Augustus
Baker, Ezra Henry
Bartley, George Edgar
Bicknell, Wm. Harry Warren
Bush, Arthur Phillips
Cassidy, William Edward
Cheney, David Batchelder
Clark, Benjamin Preston
Codman, Charles Greenough
Crahan, Thomas Joseph
Crooke, Reuben Francis
Cutler, Charles Francis
Darling, Edward Irving
Dunton, Charles Hamlin
Field, James Brainerd
Halligan, John J. F.
Hastings, Nathaniel Wade
Headley, Phineas Camp
Hoffendahl, George Gordon
Holden, Francis Faxon
Jaques, Eustace
Kelly, Henry Gilmore
Krauss, Alonzo Augustus
Langmaid, Webster Chase
Loring, Prescott
Loring, Victor Joseph
MacDonald, Martin Alan
Manning, Berwick
Mason, George Walter
M'Kenny, James Frederic
McLaughlin, Frederic Rodney
McLaughlin, John Peter
Morong, Walter Welsh
Murphy, Daniel John
Poor, James Ridgway
Prince, Frederic Henry

Reed, Charles Harry
Richardson, Frank Chase
Sawyer, Jacob J. A.
Smith, Howard Linley
Smith, Frederic Richards
Smith, Frederic Swan
Stearns, Frederic Maynard
Steele, Charles Breed
Thompson, Frederic Eldridge
Van Benthuysen, George
Waples, Rufus
Whitney, Arthur Giles
Whitridge, Roland Barker
Williams, Charles Collier
Williams, William Cowles
Williams, Franklin Delano

SUMMARY.

First Class	25
Second Class . . .	27
Third Class . . .	30
Fourth Class . . .	9
Fifth Class	54
Sixth Class	68
Total	213

ENGLISH HIGH SCHOOL.

THE Committee of the English High School respectfully present their annual report. The condition of this school for the year included between September, 1871, and September, 1872, has been good, and its results satisfactory, notwithstanding the occurrence of several unfavorable events. We refer here particularly to the sickness and resignation of teachers. Early in the winter Mr. Geo. H. Howison, one of the masters, resigned, his resignation to take effect on the 1st of February; but for six or eight weeks before his resignation, he was unable from sickness to attend to his class, or discharge the duties of his office, and a substitute had to be provided. When his resignation took effect, Mr. Albert Hale, one of the sub-masters, was promoted to be master. Later in the winter or opening spring two more teachers, Mr. Brown and Mr. Willis, sub-masters, were compelled by ill-health to seek a temporary release from their work, which was granted for the remainder of the school year. Respite from labor, and the recuperative influences of travel and change of scene and climate, brought Mr. Brown home a few weeks ago, well and strong, able to resume his duties at the opening of the school for the year 1872–73. Mr. Willis, not recovering his health at the close of the year, sent in his resignation, which was accepted. Thus for nearly one half of the working term for the year the school was deprived of three of its regular teachers. Only those acquainted with the difficulty of finding even permanent teachers competent to the instruction and discipline of the classes of the English High School can appreciate how much the school suffers when it has to employ for some months two or three even of the best substitutes, or how much this increases the duties and responsibilities of the head-master. Notwithstanding this, the condition of the school through the year was largely satisfactory. The programme of studies was well carried out in all the divisions, while the general character and deportment of the boys in the first class and their interest in their studies were particularly gratifying. This was the first class that had enjoyed throughout their whole three years' course the opportunity and advantage of systematic instruction in English Literature, Botany, Mineralogy, etc., introduced by the Committee, under leave of the Board, in 1869, and the Committee avail themselves of this opportunity to express their satisfaction at the results of this change and enlargement of the studies.

The number of boys admitted at the examinations in July and September, 1871, was 272. Of these, 24 did not avail themselves of their right and privilege to attend, so that the school opened in September with

17	pupils in the	advanced	class.
107	"	first	"
184	"	second	"
248	"	third	"
Total, 556			

The average number during the year was 516, the per cent. of attendance was 97.4. Eight boys left the first class during the year, 99 graduating; by far the largest number ever thus dismissed from the school. Diplomas were awarded to all, and Franklin medals to 18. To what various influences it is to be attributed the Committee do not propose to consider at this time; but it is a gratifying fact that of late years a much larger proportion of boys remain to complete the three years' course at the school than formerly, and the percentage of graduation now, this year, is threefold what it was ten years ago.

The class admitted in 1861 numbered 92, the number that graduated at the end of three years, 1864, was 15=16 1-3 per cent. The class admitted in 1869 numbered 199; the number graduated 1872 was 99=49 3-4 per cent. Fifteen members of this graduating class of 99 retain their connection with the school as members of the advanced class for 1872–73. This last year the advanced class numbered 17, and at the late annual exhibition of the school, their manifest proficiency in the various studies they had been pursuing reflected great credit, not only upon themselves, but upon their instructors.

In concluding their brief report, the Committee have only to express the earnest hope that the city government will not permit this school to suffer for five years to come, as it has for five years past, for the want of a suitable, convenient and appropriate building, in which the whole school can be accommodated under one roof, and thus become a unit, with one spirit pervading it and presiding over it.

Respectfully submitted for the Committee.

S. K. LOTHROP,
Chairman.

OCTOBER, 1872.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE ENGLISH HIGH SCHOOL, SEPTEMBER, 1872.

HEAD-MASTER.

CHARLES M. CUMSTON.

MASTERS.

LUTHER W. ANDERSON,
MOSES WOOLSON,
ROBERT E. BABSON,
L. HALL GRANDGENT,
ALBERT HALE.

SUB-MASTERS.

CHARLES B. TRAVIS,
JOHN P. BROWN,
CHARLES J. LINCOLN,
ALONZO G. WHITMAN,
CHARLES H. CUMSTON,
JOHN O. NORRIS,
LUCIUS H. BUCKINGHAM,
LE ROY Z. COLLINS,
JOSEPH W. KEENE,
THOMAS J. EMORY,
CHARLES O. WHITMAN,
JOHN F. CASEY.

TEACHER OF FRENCH.

NICHOLAS F. DRACOPOLIS.

TEACHER OF MUSIC.

JULIUS EICHBERG.

TEACHERS OF DRAWING.

HENRY HITCHINGS,
EDWARD K. CLARK.

TEACHER OF MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

ADVANCED CLASS.

Brigham, Oliver Smith Chapman
Buss, Edward Augustus
Covill, William James
Doherty, Cornelius Frederick
French, Abram De Grauw
Holland, John Bernard
Hurlbert, Henry Francis
Jenney, Walter
Priest, Walter Ashley
Ricker, George Fabyan
Sampson, Edward Nason
Slattery, Lawrence William
Stinson, Wilber Henshaw
Stone, Clarence Eastman
Underwood, George Frank
Wright, Walstein Fuller

FIRST CLASS.

Adams, Charles Jesse
Almy, Henry Niles
Anderson, Luther Stetson
Armstrong, George Ernest
Babcock, John Brazer, Jr.
Babcock, Wilber Chester
Baker, Charles Morrill
Baldwin, Harry Heath
Barron, Clarence Walker
Barry, Thomas Jackson
Bartlett, Charles Augustus
Bartley, William Henry
Beeching, George Washington
Beeching, William Henry
Bodwell, Charles Thomas
Bradford, William Burroughs
Brewer, Frank Crocker
Brown, Frederic Walter
Brown, Samuel Edward, Jr.
Calkins, Frederic Walter
Carter, Clarence Howard
Casco, William Henry Appleton
Caton, William Jordan
Church, Clifton
Clapp, John Bouvé
Clarke, John Henry
Cobb, Albert Winslow
Copeland, Charles Gilman
Cushing, Livingston
Daly, James Washington
Drew, Charles Fuller
Duncan, Charles Isaac
Edwards, Charles Robbins
Emerson, Henry Lawrence
Estabrook, Charles Eugene
Everett, Charles
Farrar, Granville Robinson
Faxon, Edward Pope
Fishel, Jacob Louis
Flynn, William Patrick
French, William Sidney
Gilson, Alfred Henry
Goodsell, Evelyn Bonn
Gorman, Charles Frederick
Gourley, John, Jr.
Gowen, Caleb Emery
Gray, Allen Frank, Jr.
Greene, Frank Eugene
Hawes, Edward Hall
Hews, Joseph Richard
Hunneman, George Hewes
Hunting, George Stanley
Keenan, Thomas Henry
Knights, Francis Hiram
Langell, Everard Irwin
Levi, Louis
Lincoln, David Pratt
Lincoln, Frederic Walker, Jr.
Lovis, Andrew Morgan
Lynch, John Bernard
Manson, Frederic Tower
Marshall, Melville Tilden
Mather, William Herbert
McAloon, Antoine Aloysius
McCool, Robert John
McDonald, Frederic Alexander
McGill, James Francis
McKenna, Frank Charles
M'Kenney, Charles Francis
Milton, Albert Gookin

Morey, Warren Woodbury
Moriarty, Edward Joseph
Mulchinock, John Dennis
Murphy, John Cunningham
Noble, Frank Charlton
Palmer, Benjamin Sanborn
Parsons, Edward Jenness
Peabody, Frank Everett
Pierce, Eugene David
Porter, Lewis Bates
Porter, John Allison
Prentiss, Frederic Herbert
Preston, Thomas Webb
Raymond, Frank Freeborn
Reddy, Robert Franklin
Richardson, Charles Edward
Ripley, Edward Franklin
Robinson, Arthur Burton
Roskell, George Linsay
Roulston, Thomas William
Sargent, Charles William
Saunders, Frank Dexter
Shea, Daniel Joseph
Simonds, Benjamin Frank P.
Spicer, Vibe Clay
Stephenson, Walter Bryant
Somes, Charles Frank
Stewart, Charles Edwin
Sullivan, Eugene Francis
Sullivan, Michael John
Summerfield, Edward
Talbot, Edward Lowell
Taylor, George Albert
Tufts, Harry Payne
Underwood, Arthur Roswell
Upham, Harry Thomas
Warner, Albert Eri
Webb, Henry Edgecombe
Wheeler, Albert James
Wheeler, Frederic Loring, Jr.
Willard, Charles Sumner
Willis, Charles Orsmer
Witherell, Julian Franklin
Wyman, Horace Adelbert

SECOND CLASS.

Adams, Henry
Allen, George Ellis
Andrew, Andrew Jerome
Babcock, Frank Marcellus
Bachelder, Frank Albert
Bailey, Parker Nell
Bellamy, John
Bennett, Everett True
Blakeney, Joseph Aloysius
Blodgett, Charles William
Blodgett, William Ashley
Bornstein, Mayer Louis
Bowles, Henry Byron Means
Boynton, George Wesley Berret
Brown, Alfred Winsor
Brown, Charles Gleason
Brown, William Francis
Burke, Richard, Jr.
Chandler, Oscar
Chase, William Parton
Clarke, Eugene Harmon
Cobb, Charles Hiram
Coleman, John Bernard
Conant, George Bancroft
Converse, Henry Tucker
Cosgrave, William Thomas
Cotton, Albert Ellery
Cowin, Nelson Francis
Creed, Michael James, Jr.
Crosbie, Robert Franklin
Crosby, Edward Harry
Croston, William Henry
Dalton, Rufus Hinckley
Damon, Herbert
Davis, Charles
Dexter, Charles Henry
Donald, David Peter
Drew, Walter Greenwood
Drowne, Frederic Haskell
Duran, John Henry
Dykes, Alfred, Jr.
Ellis, Edward Jarvis
Emmons, James Nathaniel
Fabyan, John
Farnsworth, Edward Miller, Jr.

Farren, Thomas George
Fillebrowne, Clarence Reynolds
Flanders, Albert Lewis
Foley, Peter
Foltz, Herbert
Foster, Henry Winslow
Frame, John Franklin
Frost, James Piper
Frye, Frank Henry
Fuller, George Samuel Taylor
Gallivan, Timothy Aloysius
Galvin, John Edward
Gay, Eben Howard
Geary, James Richard
Gill, Gregor Wymond
Glover, Nathan Holbrook
Goodwin, George Albert
Gorman, Timothy Francis
Grover, Frank Martin
Guild, Chester, Jr.
Guinzburg, Henry Aaron
Haley, Robert John
Ham, William John
Harrigan, Timothy Francis
Hartshorn, Eugene Francis
Hawthorne, Robert Samuel
Hayes, James Bernard
Hennessey, John Luke
Heyer, Frank Aloysius
Hill, Walter Bryant
Hilliard, Richard Walter
Hobbs, Frederic Walden
Holland, Charles Fletcher
Holman, Frank Chapin
Hubbard, Eliot
Jennings, Charles Edwin
Johnson, Charles Sanford
Johnson, Henry Augustus
Kelley, Arthur Freeman
Kelliher, John Dennis
Kingman, Abner, Jr.
Kingsbury, Edward Reynolds
Knapp, Samuel Stetson
Knowles, Arthur Jacob
Lapham, William Robert
Leavitt, William Sanborn
Lincoln, Leon Girard
Lodge, John Thomas
Lunt, Albert Francis
Lynch, George Joseph
May, George Alden
McCarthy, Eugene Joseph
McCrillis, James Walter
Means, Arthur Frederic
Miller, Frank Lloyd
Miller, Louis John
Misochi, Jacob Joseph
Mitchell, Edward Courtland, Jr.
Morrison, Philip
Morse, William Frederic
Munsell, Albert Henry
Murphy, James Ambrose
Murphy, Louis Arthur
Murphy, William Jeremiah
Murray, George Francis Henry
Nagles, James Aloysius
Neilson, William Amasa
Newcomb, Edward Herbert
Nickerson, Archibald Stewart
Nickerson, Stephen Westcott
Nickerson, Thomas White, Jr.
Osgood, Edward Augustus
Palmer, John Benjamin
Palmer, William Dudley
Parker, Charles Albert
Patten, Arthur Clifford
Paul, Charles Frederick
Phelps, William Sewall, Jr.
Phillips, Thomas Francis
Pickering, William Henry
Pierce, Arthur Jackson
Pierce, George Alfred
Pond, William Whiting
Pope, Benjamin, Jr.
Pope, Edwin Herbert
Porter, Harry Gardner
Porter, John Ilsley
Powell, Frank Giles
Power, Walter Avernel
Prendergast, Daniel Le Roy
Ricker, Hazen Everett
Ripley, Frederick Walker

Roundy, Franklin Fletcher
Russell, Duncan
Sanders, Joseph Warren
Seaverns, Alexander Henry
Seavey, Millard Clifton
Sheehan, James Martin
Shepard, Horace Blanchard
Shepard, John, Jr.
Shoninger, Henry
Skillings, Julius Palmer
Smith, Perry Fifield
Snelling, Washington, Jr.
Spitz, Abraham Peter
Stanwood, Eben Caldwell
Stearns, Frank Fisher
Stone, Mark
Sullivan, Jeremiah James
Tarbox, Charles Rudolph
Tierney, William Joseph
Towle, Charles Frank
Wadman, Charles Franklin
Wainright, Charles Dexter
Walbridge, Percy Edgar
Walker, Guy Carleton
Wallingford, Earnest Emeric
Warren, George Washington, Jr.
Watkins, Walter Kendall
Wentworth, Stephen Fred
Whidden, Bradley
Whidden, Eugene Lawrence
Whitney, Harry Alonzo
Whitten, Charles Nelson
Wigley, William Alden
Wiley, Jesse Sumner
Williams, Armstrong Tilton
Williams, Edward Eaton
Williams, Frank Jones
Wolf, Marcus
Wolff, Julius
Zerrahn, Frank Edward

THIRD CLASS.

Achorn, Kendall Lincoln
Adams, George
Alger, William
Allen, Francis Skinner
Allen, Henry Stacy
Anderson, James Joseph
Armstrong, John Henry
Arnold, Allen
Auster, Walter
Babcock, Henry Elliot
Bachelder, John Walter
Baker, Erastus Frank
Baldwin, Frank Fenno
Barrett, Charles Rosmond
Bartlett, Alfred Herbert
Batchelder, Harry Augustus
Blanchard, Charles Frederick
Bond, Luther Asa Ellis
Bouvé, James Allen
Bowditch, Charles Henry
Bowen, Benjamin James
Boyd, James
Bradford, Frank Waldo
Brooks, Charles Elwell
Brooks, William Austin
Brown, George Edward
Brownell, Henry Grinnel
Burgess, Clinton Brooks
Burgess, Howard Kent
Burley, William Peter
Burr, Charles Henry
Burroughs, Marshall A. Lewis
Butler, Edward James
Carr, George Montgomery
Casey, Thomas William
Chandler, Henry Gardner
Cherrington, William Church
Child, John Howard
Child, Willis Sanford
Clark, John Joseph
Clark, Nathan Dearborn
Clifford, Chandler Robbins
Cochrane, John Francis
Coffee, Jeremiah
Collison, Harvey Newton
Conness, John, Jr.
Connor, George Winstow
Corrigan, John Joseph
Coyle, John Francis

Crockett, Charles Henry
Crooker, Charles Bailey
Crosby, Samuel Travett
Crowell. Charles Seth
Cruse, William A. Christian
Cummings, Ciro
Cunningham, Charles Edward
Currier, Edward Theodore
Cutler, Edward Arthurson
Cutter, Henry Arthur
Damrell, Charles
Davenport, Howard Stone
Davenport, William Edward
Davis, William Greenman
Davis, William Sweetser
Dempsy, Francis Joseph
Denham, Matthew Thacher
Devine, John Agustine
Dillon, Patrick Henry
Doane, George Alexander, Jr.
Dodge, John Thomas
Dolan, Edwin
Dooling, James Joseph
Doolittle, Frank Laurence
Dowling, William Michael
Duffly, Thomas Francis
Dunbar, Thomas Locke
Dyer, Frank Wells
Earle, William Ashbel
Edwards, William Pierport
Elsbru, Frank Merton
Elson, Alfred Walter
Esterbrook, Henry Wilde
Farless, James Harry
Farrar, Frederick Albert
Farwell, Henry Lincoln
Fera, George Henry
Finn, Richard Henry
Firth, Charles
Fisk, Frank Coffin
Fitz Gibbon, Frank Joseph
Fletcher, Henry Oliver
Flint, George Henry
Forbush, Frank Mortimer
Frazier, George Henry
Frederick, Frank Seward
Frost, Arthur Hamilton
Gage, Aaron Willis
Garrett, Andrew Francis
Geary, Daniel Joseph
Gentleman, George John
Gibbons, Joseph McKean
Gibbons, Robert Tilden
Glynn, Arthur Henry
Gottlob, Jacob
Graham, Thomas Joseph
Greenberg, Alie
Griffen, James Joseph
Grovenor, Edmund Ransom
Halden, Harry
Haley, Francis George
Harding, Charles Albert
Haskell, Waldo Clark
Hastings, Harry Marchant
Hayes, Walter Lawton
Hegarty, John
Heyer, Charles A. Frederick
Hinkley, George Washington
Hitchcock, Hiram Augustus
Hoey, Thomas William Charles
Holmes, Ernest
Hopkins, William Alden
Horton, Charles Henry
Houghton, Michael James
Hunt, Edward Anderson
Hunt, Michael
Hurley, Daniel Francis
Hyams, Godfrey Michael
Hyde, William Andrew
Irving, William Nathaniel
Janes, Charles Wm. Henry, Jr.
Jarvis, William Fernice
Johnson, Eugene Percy
Joy, Franklin Lawrence
Keeler, Edward Fisher
Kellogg, Frank Gilman
Kelley, George Francis
Kezer, William Edward
Kierman, Charles Joseph
Kimball, Arthur Seymore
Kimball, Henry Thornton
Kingman, George Flavel

Knowles, William Joseph
Kyle, Flavill Winslow
Lally, William Augustine Peter
Lamb, John Bernard
Lane, Frêderic Henry
Lane, Thomas Joseph
Lappen, Frank
Leonard, Henry Read
Loeffer, Charles Samuel
Loring, Frederic Reeves
Lotts, Henry Bartlett
Loveland, Herbert Winslow
Lynch, John
Lynch, Samuel Bartlett
Macdonald, Harry Neilson
Mackie, Frank
MacLean, Kenneth Alexander
Macomber, Chandler
Magurin, Gilbert Lewis
Marsh, Elisha Wiley
Mason, George Buckminster
McAloon, Augustus Henry
McCarthy, Michael James
McCobb, Frank Wilder
McCrillis, William
McInerney, James Edward
McGlinchey, Fred William
McLaughlin, Fred Hamilton
McQuarry, Ranald
Mehegan, Timothy
Meinrath, Ariel
Meins, Charles Everett
Merrill, Thomas
Miller, Edwin Child
Milles, William Ambrose
Moore, John Joseph
Morrison, Willard Cudworth
Morse, Charles Frederick
Morse, Edward Wendell
Morss, Charles Anthony, Jr.
Mullen, John
Mungovan, John Francis
Murphy, Thomas Joseph
Myerson, Louis Albert
Neagle, William
Neiley, George Abbott
Nerney, John Joseph
Nickerson, George
Niles, Lawrence Emery
North, Mayne Hamilton
O'Neil, John
Paradise, Charles William
Parker, Frank Howard
Parker, John
Parr, Charles Samuel
Perry, Charles Hall
Perry, Joseph Malcolm
Phelps, Charles Herbert
Pierce, Jesse
Pierce, William Arthur
Pigeon, Charles Warren
Pomeroy, William Henry
Pond, George Warner
Porter, Frank Albert
Porter, William Doane
Pratt, Samuel Barker
Quimby, Charles Linneanvus
Quinlan, Patrick
Quinn, Patrick Francis
Quinn, Philip Henry
Renfrew, Charles Park
Rich, Isaac
Rich, William Arthur
Richards, Clarence Olando
Roach, Albert James
Rollins, William Stacy
Ruddell, William John
Russell, John Henry Nicholas
Ryder, Charles Christopher
Sampson, Christian Henry
Sampson, George Harvey
Sanford, Joseph Briggs
Sawyer, Fred Russell
Scanlon, John Joseph
Schlimper, Henry
Scollard, Cornelius James
Seaverns, Stanley Eugene
Shepard, David Paul
Slattery, Thomas Francis
Small, Herbert Elwin
Smith, George Ammi
Snelling, George Edward

Souther, John Frank
Spaulding, Albert Day
Spear, Alfred
Spinney, Edwin Rogers
Standish, James Martin
Stanton, William John
Stanwood, Frederick Storer
Staples, Walter James
Stetson, Edwin Emerson
Stone, Henry Eben
Stowers, Frank
Strauss, Louis
Sullivan, Henry Augustus
Swallow, William Herbert
Taylor, Frank Forrest
Taylor, Frederic Patterson
Tenney, Harry Warner
Thayer, Harry Francis
Treadwell, William Perces
Troombly, James Frederick
Union, Frank Loring
Utley, Charles Henry
Varney, George Herbert
Waitt, Arthur Manning
Wardwell, George Jarvis
Ware, Bruce Richardson
Warshauer, Henry
Webber, Charles Howard
Welch, William John Patrick
Weltch, Frank Ernest
Weston, Arthur Henry
Whidden, Renton
White, Albion Page
Whiting, William Sawin
Whitman, Albert Louis
Whitney, Frank Cole
Whitney, William Henry
Wilbor, Albert Gallatin, Jr.
Wilde, Edward Cabot
Wilder, Charles Willoughby
Wilkie, James, Jr.
Willis, Benjamin Cushing
Wilson, Frank Ashbury
Withington, Joseph Cotton
Woods, Frank Forest
Wright, Merle St. Croix
Wunderlich, Gustave
Wyman, James Taylor

SUMMARY.

Advanced Class . . .	16
First Class . . .	114
Second Class . . .	177
Third Class . . .	281
Total	588

GIRLS' HIGH AND NORMAL SCHOOL.

The Committee on the Girls' High and Normal School respectfully present their annual

REPORT.

After long and mature deliberation, a majority of the School Board deemed it advisable to separate the Normal from the Girls' High School, and this separation went thoroughly into effect at the conclusion of the regular school year in July, 1872.

Previously to that time, girls who had no other object in study than to secure as good an education as the Public Schools of Boston would afford, and girls who proposed to prepare themselves for teachers, worked together, side by side, under the superintendence of the same instructors; whose labors were regulated and arranged by one and the same head-master, Ephraim Hunt, LL. D.

A Model Primary School also existed in connection with the Normal Department of the High School, which was of great service, not only to the children composing it, but in preparing members of the Normal Class for the duties they proposed to undertake as teachers.

Upon the establishment of a separate Normal School, and the appointment of a head-master to its special charge, with the understanding that only graduates from this or other high schools of the same grade, or persons whose talents and attainments were on a par with such graduates, were to be admitted to its membership, this model school was given up, greatly to the sorrow of those whose children were so fortunate as to have been connected with it; its special teachers were transferred to the Normal School, and thereafter the Girls' High School was regulated without reference to subsequent callings or pursuits on the part of its graduates.

The success which continues to attend the regular routine of studies, recitations and lectures in this school more than equals the anticipations of those who established it, and fully justifies the large expense involved under its present management. The spacious accommodations of the new building on West Newton street, with the well-appointed laboratories and cabinets, affording to pupils more and more information upon Chemistry, Botany, Physiology, Natural History and Geology, are better and better appreciated the longer they are used.

Although complaint continues to be made that the course of study necessitates a "pressure" which only the more vigorous constitutions can endure unimpaired, and the usual percentage of pupils continues to fall off previous to examinations for the Middle and Senior years, it seems to the committee that all which can be done has been done to meet the average requirements of the age, and adapt the work of the school to the health and strength of the pupils who enter.

In view of the demand constantly made on the part of a few gifted and studious young women desiring to prolong their culture and investigations beyond the period of three years, an advanced year has been authorized, during which lectures on American History are delivered by Dr. Eliot, and recitations heard in the Latin, French and German languages, Ethics, Intellectual Philosophy, English Literature, Analytical Geometry and Calculus.

The study of Botany has been pursued under specially favorable circumstances during the year, owing to the fact that an appropriation of one hundred dollars from the Committee on Accounts enabled Mr. William Edwards, of Eliot, to furnish classes with specimens culled freshly from the fields or conservatories every day.

In drawing and music the pupils have made rapid and commendable progress, and much has been done in both these branches to disabuse the public mind of the idea, unfortunately too common in this country heretofore, that only the exceptionally gifted can acquire skill in these great arts. For the present, the public literary exercises, formerly held once a month, have been suspended, and in lieu thereof, a weekly gathering takes place in the hall, at which compositions are read, prepared by the pupils with special reference to this occasion.

As it was found, in providing for the study of chemistry, that the time of Miss Bessie T. Capen, the teacher, was so much taken up in the manipulation of apparatus and materials, as seriously to interfere with her usefulness as an instructor, she has been supplied with an associate or assistant, and, thus relieved, has been enabled to devote herself entirely to teaching.

The corps of instructors now comprises one head-master, one master's assistant, one teacher of chemistry, four head assistants, eighteen assistants, and five special teachers, making thirty teachers in all, and it is cause for special congratulation that the services of so many faithful, able and accomplished gentlemen and ladies have been secured to the city in this capacity; and supplied with abundant resources in the way of apparatus, materials, specimens, reference-books, maps, charts, etc., they have been enabled, during the year past, to prosecute their labors with so much energy and success. The spirit of the pupils has been in every way commendable. With the accompanying statistics, details, etc., the report is respectfully submitted for the Committee.

SENIOR CLASS.

GEOLOGY EXAMINATION, 1871–72.

I. Distinguish between igneous and metamorphic rocks.

II. Of what does granite consist? Syenite?

III. Name the different geological ages of the world.

IV. By what is the age of a rock chiefly determined?

V. What was the form of the North America of the Azoic Age, and where was it situated?

VI. What are the mechanical effects of water? Name any remarkable instance of erosion by fresh water.

VII. What are glaciers? Moraines?

VIII. What are some of the proofs of the internal heat of the earth?

IX. How are volcanoes distributed?

X. What is the cause of land-slides?

HISTORY EXAMINATION.

Ancient History.

I. Name the sources of Ancient History.

II. Name the great empires of antiquity in the order of their supremacy.

III. Give the distinguishing characteristics of the Athenians, of the Spartans.

IV. Give a brief account of the Persian War (battles, generals, and results).

V. Designate the periods of literary and artistic excellence in the history of Greece. Of Rome.

VI. Name the different forms of government tried by the Romans, and in the orders of trial.

VII. Name the most important Roman Wars in order, and state the results of each.

VIII. For what were the Gracchi celebrated?

IX. Describe briefly the religions of the Greeks and Romans.

X. Name the first Christian emperor, date, and the important events of his reign.

Modern History.

I. What French kings were contemporary with Elizabeth?

II. State briefly what were the principal effects of the Norman Conquest.

III. For what are the reigns of Henry II., John, Henry III., and Henry VIII remarkable?

IV. What was the edict of Nantes, by whom granted, by whom revoked?

V. What were some of the causes of the French revolution of 1789?

VI. State the principal causes that led to the execution of Charles I., of England.

VII. Name the three last wars in which the French were engaged.

VIII. Tell what you know of the efforts to establish a Republic in France.

IX. Mention four noted battles in which the French and English were opposed to each other.

X. Speak briefly of the conflicts between church and state in England.

TRIGONOMETRY EXAMINATION.

I. Name and illustrate all the trigonometrical functions of an arc.

II. Prove that in any plane triangle the sides are proportional to the sines of the opposite angles.

III. Prove that in any plane triangle the sum of any two sides is to their difference as the tangent of half the sum of the opposite angles is to the tangent of half their difference.

IV. In a triangle the side A B = 532.
" " B C = 358.
" " angle C = 107° 40′.

Required the other parts.

V. In a triangle the side A B = 176.
" " A C = 133.
" angle A = 73°.

Required the other parts.

NATURAL PHILOSOPHY EXAMINATION.

I. A body weighs three pounds in air, and one pound in water; what is its specific gravity?

II. Explain the experiments you have performed or assisted at, with the pendulum.

III. Give the law of equilibrium of machines; and solve the following problem. Lever 10 feet long, fulcrum 1 foot from weight (1,000 pounds), what is the power?

IV. Draw and explain common suction pump.

V. Name and illustrate the modes of communication of heat.

VI. Describe the solar spectrum.

VII. Trace parallel rays on convex and concave mirrors; and through double convex and concave lenses.

VIII. Name three experiments you have performed in optics, and state what they established.

IX. Describe briefly three experiments in electricity, and state the facts established thereby.

X. Explain induction in electricity and magnetism.

ASTRONOMY EXAMINATION.

I. Define Elongation, Nodes, Radius-Vector, and Aphelion.

II. Find the synodic period of Jupiter.

III. Where is twilight longest? Why?

IV. What is the right ascension of the sun at the winter solstice?

V. The declination of a star is 20° S.; what is its meridian altitude at Boston?

VI. What is the equation of time? When is it greatest? When least?

VII. Find the distance of the sun.

VIII. State three observations you have made yourself, upon the heavenly bodies. Of what astronomical facts were they explanatory?

IX. Which are more numerous, solar or lunar eclipses? Why? Which are more likely to be visible at any one place? Why?

X. Define spring and neap tides.

LATIN.

I What is the subject of the Sixth Book of the Æneid?

II. Give some account of the Harpies and of the Cyclops.

III. Translate: (Æneid, Book IV., l. 556–61)—

Huic se forma dei vultu redeuntis eodem
Obtulit in somnis, rursusque ita visa monere est,
Omnia Mercurio similis, vocemque coloremque.
Et crines flavos et membra decora juventa;
Nate *dea*, portes hoc sub casu ducere somnos,
Nec, quæ te circum *stent* deinde pericula cernis?

IV. Parse the words indicated in the above.

V. Scan the following lines: —

Principio cœlum ac terras camposque liquentis.
Lucentemque globum lunæ Titaniaque astra.

GERMAN.

I. Translate into English: —

O! das Leben, Vater,
Hat Reize, die wir nie gekannt. — Wir haben
Des schönen Lebens öde Küste nur
Wie ein umirrend Räubersvolk befahren
Das, in sein dumpfig enges Schiff gepresst,
Im wüsten Meer mit wüsten Sitten haust,
Vom grossen Land nichts als die Buchten kennt,
Wom die Diebeslandung wagen darf.
Was in den innern Thälern Köstliches
Das Land verbirgt, o! davon — davon ist
Auf unsrer wilden Fahrt, uns nichts erschienen.

II. Conjugate: *I had appeared* in both numbers.

III. Conjugate: *I was pressed* in both numbers.

IV. Give the principal parts of all strong and all irregular verbs in this text.

V. Decline *a narrow ship* in the singular.

VI. What declension is *enges*, and why used here?

VII. What is left out after *gekannt*, and by what rule?

VIII. Translate: I knew the father, but not the son.

IX. Translate: The land which lies at the coast.

X. Translate: When he came I went away.

FRENCH.

I. Translate into idiomatic French: —

(1.) Why, you've never said a word about it till now.

(2.) Better and better.

(3.) And what of that, pray?

(4.) There's mischief enough done, as it is.

II. Translate: —

(1.) Vous feriez mieux de vous en rappoter entièrement à moi.

(2.) Si je m'étais douté de cela.

(3.) Il est venu à l'idée à ma sœur et à moi.

III. Correct: —

(1.) Allez et priez à votre mere a venir ici à l'instant.

(2.) Je ne doute pas que vous avez raison.

(3.) Il sera difficile a vous entendre.

IV. Translate into idiomatic French: —

Potter. Why, the fact is, it's been my sister's doing all along; and now she's undertaken for me to take fifty more shares, and, as they must be paid for out of the money due under Emmy's settlement, she thought you might have no objection to the arrangement; and, meanwhile, that you would take the interest of Emmy's money instead of the principal.

V. Translate: —

Emilia. Toute cette faveur ne me rend pas mon père;
Et de quelque façon que l'on me considère,
Abondante en richesse, ou puissante en crédit,
Je demeure toujours la fille d'un proscrit.
Les bienfaits ne font pas toujours ce que tu penses,
D'une main odieuse ils tiennent lieu d'offenses.

VI. Translate: —

Dear Miss Abbott, — Will you come and take tea with me to-morrow evening? I have invited Miss Drake and her brother from Newton.

Your friend,
Mary Cook.

Boston, June 25, 1872.

VII. Translate: —

Hawksley. Indeed! A punster might be provoked into saying it was proper work for a flat. [*All laugh.*]

Mildmay. Flat? Oh, I see. Very good — very good indeed. Would you like to try your hand?

Hawksley. No, thank you. I've no talent for the fine arts. Charming color, isn't it, ladies? One would say Mildmay had a natural eye for green.

VIII. Translate: —

Question. How do you do, Miss Clark? I am delighted to see you. How long have you been in town?

Answer. I came a week ago. Can't you come and see me to-morrow? I must go home soon.

IX. Translate: —

Baptiste. Messieurs, je ne vous quitte pas; je ne resterais pas seul ici pour un empire.

Frédérie. Que veux tu dire? [Regardant Gustave qui fait à Baptiste des signes de se taire.] Eh, mais! qu'as tu donc aussi? . . . je n avais pas remarqué d'abord; mais je te trouve aussi changé que Baptiste. [En riant.] Est-ce que vous auriez vu le fantôme, par hasard?

X. Pronunciation.

MIDDLE CLASS.

ENGLISH LITERATURE.

I. Name one or more of the important productions of each of the authors you have studied, with the author's name.

II. Quote from Tennyson, Goldsmith, and Addison.

III. Select any passage from Macaulay's prose, and show elements of style.

IV. Of the authors studied, which one do you prefer? Reasons.

V. Name your favorite production of your favorite author; give the plan of it; and characteristics of style.

PHYSIOLOGY.

I. What are the processes to which a mouthful of nutritious food must be subjected before it enters the circulation?

II. Describe the perspiratory apparatus and its uses.

III. Describe the circulation of the blood.

IV. Name secreting organs and their secretions.

V. Show the importance of breathing freely and of breathing pure air.

VI. State some important laws of health, to be observed in eating, in the dress, in the use of the eyes.

VII. Where is the spinal cord? The medulla oblongata? The larnyx? The cornea? The Schneiderian membrane?

VIII. Describe the structure and action of a muscle.

IX. How is animal heat generated?

X. Describe the manner in which a sensation is produced.

GEOMETRY.

I. Define, illustrate, and name the different kinds of triangles. Define ratio and proportion.

II. If $a : b = c : d$ and $m : c = n : d$, — prove that $a : b = m : n$.

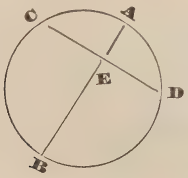
III. A line cutting the sides of a triangle parallel to the base divides them proportionaliy. Proof required.

IV. Define segment, sector, prism, cylinder, frustum.

V. State in terms of π and R, the circumference of a circle, — area, — surface of a sphere, — volume.

VI. How do similar surfaces compare? Solids?

VII.



$$\left.\begin{aligned} \text{Given } CEA &= 90^\circ \\ \text{arc } CA &= 30^\circ \\ \text{arc } CB &= 80^\circ \end{aligned}\right\} \text{required arcs } BD \text{ \& } AD.$$

VIII. A right cone and cylinder have the same base and altitude: radius of base = 3 ft.; slant height of cone = 5 ft. Required circumference of base, and convex surface of cylinder.

IX. Either plane angle of a triedral angle is less than the sum of the other two. Proof required.

X. Area of triangle equals perimeter into one-half the radius of inscribed circle. Proof required.

ZOOLOGY.

I. Classify the horse, common sheep, cat-bird, and golden-winged woodpecker.

II. What can you say of the different forms of the beaks of birds?

III. State the characteristics of the Quadrumana.

IV. Describe the order Pachydermata and name some typical animals of the order.

V. Give some points of similarity between the Raptores of Aves, and the Carnivora of Mammalia.

VI. What can you say of the circulation and respiration of Marine Mammals?

VII. What are the peculiarities in the teeth of the Rodentia? Show the adaptation of these to the habits of the order.

VIII. Name the sub-orders of Carnivora, and give a definition of each.

IX. Name and give the situation of the feathers of a bird's wing.

X. Classify and describe the bald eagle.

FRENCH.

I. Translate: Michel-Ange n'avait pas encore quatorze ans lorsqu'après avoir copié un petit tableau appartenant à un ami de son maître, il se détermina à garder l'original et de rendre la copie, qu'il enfuma légèrement, afin de lui donner un certain vernis d'antiquité. Ni Dominique ni son ami ne s'aperçurent de cette substitution, et il fallut que Michel-Ange la leur avovât pour qu'on lui remît son ouvrage.

II. Translate into French:—

(1.) Give me some pens and some good paper.

(2.) There are too many mistakes in your translation.

(3.) We are going to Paris.

(4.) I am cold and sleepy.

(5.) It is very warm to-day.

III. Write the imperfect indicative, and the imperfect subjunctive of the verb *finir.*

IV. Give all the irregular tenses of the verbs *aller* and *faire.*

V. Give the rules for the agreement of the past participle.

VI. Give three cases in which the definite article before the noun is omitted after *de.*

VII. Give the plural of *bétail*, *bataille*, *détail*, *travail*, *gentilhomme*, and the singular of *ceux* and desquelles.

VIII. Translate into English: —

"Avez-vous assisté au concert?"

"Je vous engage à y aller."

Il avait de rares dispositions pour le dessin, et il l'emportait sur tous ses rivaux.

IX. Translate into French: —

"Charles was born in France, on the 10th of June, 1547, when Henry VIII., was king of England, at Caen, a little town whose inhabitants are neither poor nor rich, but all honest and respectable.

X. Pronunciation.

TRIGONOMETRY.

I. From the top of a house whose height is 30 feet, I observe the angle of depression of an object standing on the same horizontal plane with the house to be 36° 52′ 12″. What is the distance of the object from the base of the house, and what is the length of a line that will just connect the object with the top of the house?

II. From the top of a tower whose height is 108 feet, the angles of depression to the top and bottom of a vertical column standing on the horizontal plane, are found to be 30° and 60° respectively. What is the height of the column?

III. State all the principles concerning the characteristics of logarithms.

IV. Name and define all the functions of arcs.

V. Given two sides and the included angle of a triangle, how shall the remaining parts be found?

GERMAN.

I. Translate into English: —

Als er an seine Wohnung gekommen, war es fast völlig dunkel geworden; er stolperte die Treppe hinauf und trat in seine Stube. Ein süsser Duft schlug ihm entgegen. Mit zitternder Hand zündete er sein Licht an; du lag ein mächtiges Packet auf dem Tisch, und als er es öffnete, fielen die wohlbekannten braunen Festkuchen heraus; auf einigen waren die anfangsbuchstaben seines Namens in zucker ausgestreut; das konnte Nieniaud anders als Elisabeth gethan haben.

II. State the gender and case of all personal pronouns in the text.

III. Conjugate *werden* in the present indicative.

IV. " *schlagen* in the past indicative of the passive voice.

V. Give the principal parts of the first four strong verbs in the text.

VI. What prefixes are always inseparable?

VII. Decline *the trembling hand* in singular.

VIII. Translate into German: —

He had not come into his room.

IX. Translate: On the table stood a candle.

X. " What will you do in the room?

LATIN.

I. Translate: —

In primis hoc *volunt* persuadere, non interire *animas*, sed ab aliis post mortem *transire* ad alios, atque *hoc* maximè ad virtutem excitari putant, *metu* mortis neglecto. Multa prætereà de sideribus atque eorum motu, de mundi ac terrarum magnitudine, de rerum naturâ, de deorum immortalium vi ac potestate, disputant et *juventuti tradunt.*

II. Parse the nouns and pronouns in italics in the above.

III. Parse the verbs indicated in the same, and give some English derivations from them.

IV. Translate in three forms. He sent men to plough the field.

V. In the following sentence indicate the cases and moods required by the Latin idiom: —

"When Regulus came to Rome he said that he was no longer a senator, since he had come into the power of the enemy."

JUNIOR CLASS.

CHEMISTRY EXAMINATION.

I. Define acids: name three, and some of their important compounds.

II. Give the properties and preparation of hydrogen.

III. Name the principal properties of carbonic acids; and how is it made?

IV. Define allotropism and illustrate.

V. What is the cause of light in ordinary flame?

VI. Give the chemical action of chlorine in bleaching.

VII. Give the chemistry of soap-making.

VIII. Explain the action of soap on hard water.

IX. How does the oxhydrogen flame differ from ordinary flame?

X. State the difference between organic and inorganic chemistry.

RHETORIC EXAMINATION.

I. What is meant by effectiveness of style? What are some of the principal means of effectiveness?

II. Define and illustrate metonymy and epigram.

III. What advantages has metaphor over simile?

IV. Point out the figures in the following passages: —

1. The depth said, it is not in me;
   And the sea said, it is not with me.
2. Knowledge, the wing wherewith we fly to Heaven.
3. In peace thou art the gale of spring;
   In war the mountain storm.

4. The shot of the enemy mowed down our ranks.

5. Beauty unadorned 's adorned the most.

V. Define allegory, and name its different forms.

VI. " brevity " " the fault opposed to it.

VI. " simplicity in style, and mention some classes of simple terms.

VIII. Define strength and sublimity as a quality of style.

" beauty as a quality of style. Name the qualities essential to both.

IX. What is meant by taste in composition, and what is the standard of taste?

X. Distinguish between wit and humor, and illustrate. Mention some celebrated wits.

MINERALOGY EXAMINATION.

I. Define Mineralogy, and state the difference between a mineral and a vegetable.

II. Name five minerals, giving the chemical composition, and stating one important fact respecting each.

III. Name and illustrate the different modes of crystallization. State any case of change in crystallization in solids.

IV. What mineral is most abundant? State its chemical composition. Name the principal varieties. What are some of its principal uses in nature and in the arts?

V. Give the chemical composition of plaster of Paris. How does it differ from gypsum? How is it affected by acids? Why?

VI. Give the fundamental crystalline form of calcite, its action before the blow-pipe, and with acids.

VII. State the difference between granite, gneiss and syenite. What is the composition of granite?

VIII. Give a complete description of iron pyrites. Why cannot good iron be easily obtained from pyrites? What important articles of commerce are obtained from it?

IX. What is galena? Give its crystalline form and chemical composition.

X. State some of the methods by which metals are separated from their ores.

LITERATURE EXAMINATION.

I. Name the chief varieties of poetry.

Define lyric poetry, and illustrate some of its varieties.

II. Define epic poetry. Mention some of its classes.

III. Mention the distinguishing characteristics of the Great Epic, and mention as many of the Great Epic poems as you can remember.

IV. Quote from four poets.

V. To what class of poetry does "Evangeline" belong? What is the metre? Mention some of its beauties.

VI. What kind of poetry do you prefer? Mention one of your favorite selections, giving reason for choice.

VII. Characterize Irving's style; name some of his principal works.

VIII. Which of his works do you prefer? Give the reason.

IX. Quote from Irving, indicating the source.

X. Quote from Lowell.

ALGEBRA EXAMINATION.

I. Define term, member, binomial.

II. Define equation of the first degree, pure quadratic, affected quadratic.

III. Divide $x^3-5x^2-46x-40$ by $x+4$.

IV. $\frac{5x-7}{2}-\frac{2x+7}{3}=3x-14$. Find x.

V. *G. C. D.* and *L. C. M.* of $3x^2y+3xy^2$ and $3x^2+6xy+3y^2$.

VI. $$\left.\begin{array}{l} 1)\ \frac{x+4}{y}=\frac{1}{2} \\ 2)\ \frac{x}{y+7}=\frac{1}{5} \end{array}\right\}$$ Find x and y.

VII. $x^0 = ?$ $\frac{0}{0} = ?$ $m \times 0 = ?$ $\frac{a}{0} = ?$

VIII. Find a quantity, which being divided by a and b, the sum of the quotients will be c.

Make Rule.

IX. Amount, principal and time being given, find the formula for the rate.

X. $\frac{x}{x+1} + \frac{x+1}{x} = \frac{13}{6}$. Find x.

BOTANY EXAMINATION.

I. Describe an exogenous stem, and give the other characteristics of a plant which has it.

II. Explain the structure and use of the leaf.

III. When should trees be transplanted? Why?

IV. Describe the different modes by which plants propagate naturally.

V. How may a compound pistil be recognized?

VI. Describe the fruit of the strawberry, raspberry, apple, fig, orange.

VII. Is nourishment stored up in plants in the form of sugar or of starch? Why?

VIII. What are the characteristics of the rose family?

$\left.\begin{array}{l}\text{IX.}\\ \text{X.}\end{array}\right\}$ Analysis of the Azalea viscosa.

LATIN.

I. Translate: Apud Helvetios longe nobilissimus fuit et ditissimus Orgetorix. *Is*, H. Hersala et H. Pisone *consulibus*, *regni cupiditate* inductus conjurationem nobilitatis fecit, et *civitati* persuasit ut de finibus suis cum omnibus copiis exirent.

II. Parse the words indicated in the above.

III. Decline *is*, *consulibus*, *regni*.

IV. Give the principal parts and the synopsis in the third person singular, of *persuasit.*

V. Consilia *delendi urbes:* Change this to another form and define each.

GERMAN.

I. Translate into English: —

Als Ottilie, ausser Athem und fast ohne Bewusstsein, auf der Anhöhe angekommen war, und sich von ihrem Schrecken etwas erholt hatte, blickte sie um sich und rief mit Entsetzen: "Wo ist mein kleinstes Kind, mein Konrad?" Das Kind hatte in der Wiege neben dem Bette der Mutter gelegen. Das Wasser war so plötz lich in die Kammer eingedrungen dass die Wiege sogleich zu schwimmen anfing, und von der Stelle hinweggerrissen wurde.

II. Give the definite article in full.

III. Give the present indicative of *haben.*

IV. Give the past indicative of *schwimmen.*

V. State the number and case of all possessive pronouns used in this text.

VI. Give the principal parts of four strong verbs found in the text.

VII. Conjugate *blicken* in the present indicative.

Translate into German: —

VIII. The mother stood on the hill.

IX. The child lies in the cradle.

X. He has called me.

WARREN H. CUDWORTH,
Chairman.

Number admitted to the Girls' High School, from different Schools, in each year, from September, 1852, *to September,* 1872, *inclusive.*

NAMES OF SCHOOLS.	1852–3.	1853–4.	1854–5.	1855–6.	1856–7.	1857–8.	1858–9.	1859–60.	1860–1.	1861–2.	1862–3.	1863–4.	1864–5.	1865–6.	1866–7.	1867–8.	1868–9.	1869–70.	1870–1.	1871–2.	1872.	Total.
Adams . . .	.	.	.	.	.	4	4	8	5	9	4	4	5	3	6	5	5	8	4	10	16	100
Bigelow . .	9	10	7	7	9	4	8	11	4	10	12	7	6	7	5	3	10	8	.	.	.	137
Bowditch .	.	.	.	.	.	.	.	.	.	4	6	3	4	2	5	4	5	3	8	4	8	56
Bowdoin . .	14	13	14	7	14	12	17	13	10	18	16	10	8	16	16	12	9	17	19	17	20	292
Boylston . .	2	4	.	1	1	.	2	2	2	.	.	.	.	.	.	.	.	.	.	.	7	21
Chapman .	8	3	4	5	9	4	4	12	7	1	7	8	6	11	5	12	5	11	11	8	10	151
Comins . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	7	4	8	11	31
Dearborn .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	4	7
Dorches'r H.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	1	1	8
Dudley . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	6	2	16
Dwight . .	2	2	4	6	4	8	8	8	8	.	.	.	.	.	.	.	.	.	.	.	.	50
Everett . .	.	.	.	.	.	.	.	.	.	13	9	20	16	21	28	19	15	26	29	38	35	269
Everett, (D.)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	6	2	10
Francis st. .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1
Franklin . .	8	4	7	9	5	12	10	20	13	14	13	17	12	10	17	19	17	24	26	24	28	309
Gibson . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	2	6
Hancock . .	4	5	2	6	13	9	8	13	12	8	16	9	10	12	9	9	7	13	12	19	20	216
Harris . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	4	6
No. Johnson	5	6	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17
So. Johnson	.	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5
Lawrence .	.	.	.	.	5	1	1	5	4	7	3	6	4	6	1	5	.	.	.	.	.	48
Lewis . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	12	6	6	24
Lincoln . .	.	.	.	.	.	.	.	.	7	7	7	7	8	7	5	2	4	12	13	16	16	111
Lyman . .	4	11	5	10	3	2	3	1	4	3	2	4	4	3	2	4	5	2	2	5	7	86
Mather . .	3	4	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9
Mather (D.)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	3
Minot . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1	4
Norcross . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	8	16	12	22	61
Otis	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
Prescott . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	3	7	4	7	10	34
Sherwin . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Shurtleff . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	16	19	19	54
Wells . . .	13	6	4	14	6	6	7	16	8	12	7	8	6	4	14	11	10	11	10	8	8	189
Winthrop .	8	4	3	18	11	14	10	14	21	22	24	17	14	10	17	18	16	17	16	28	22	324
Oth'r sources	21	12	15	22	12	13	13	21	14	27	31	35	65	53	67	45	89	99	75	69	59	857
Total . .	104	89	73	105	92	89	95	144	119	155	157	155	168	165	197	171	205	273	294	325	341	3516
Graduated	28	23	23	25	30	28	39	57	46	58	59	52	57	39	72	62	75	94	.	.	.	. .

CATALOGUE OF THE TEACHERS AND PUPILS OF THE GIRLS' HIGH SCHOOL, OCTOBER 1, 1872.

HEAD-MASTER.

SAMUEL ELIOT.

MASTER'S-ASSISTANT.

HARRIET E. CARYL.

TEACHER OF CHEMISTRY.

BESSIE T. CAPEN.

HEAD-ASSISTANTS.

MARGARET A. BADGER,
EMMA A. TEMPLE,
KATHARINE KNAPP,
MARY E. SCATES.

ASSISTANTS.

ADELINE L. SYLVESTER,
ELIZABETH C. LIGHT,
LUCY O. FESSENDEN,
JULIA A. JELLISON,
ADELINE S. TUFTS,
ALICE M. WELLINGTON,
EMERETTE O. PATCH,
REBECCA R. JOSLIN,
S. ANNIE SHOREY,
AUGUSTA C. KIMBALL,
ELLEN O. SWAIN,
MARY E. HOLBROOK,
FLORENCE GRAY,
LUCY R. WOODS,
ELLEN M. FOLSOM,
MARY J. ALLISON,
LAURA B. WHITE.

PROSPÈRE MORAND,	Teacher	of	French.
E. C. F. KRAUSS,	"	"	German.
JULIUS EICHBERG,	"	"	Music.
HENRY HITCHINGS,	"	"	Drawing.
MERCY A. BAILEY,	"	"	"

PUPILS.

ADVANCED CLASS.

Aldrich, Millie A.
Babcock, Nellie S.
Baker, Carrie L.
Boyden, Ida L.
Bridge, Annie P.
Comer, Fannie T.
Davenport, Josie F.
Lothrop, Carrie T.
Morrill, Julia L.
Morrison, Mary G.
Murray, Parnell S.
Page, Lilias
Schlegel, Frances
Webb, Anna W.
Webb, Bessie T.
Wilbor, Lizzie — 16.

SENIOR CLASS.

Adams, Helen M.
Aldrich, Jessie S.
Anderson, Lena G.
Anderson, Mary E.
Ashley, Cora I.
Atwood, Ella C.
Austin, Allie N.
Austin, Alma J.
Babson, Kate
Baldwin, Josephine
Bartlett, Charlotte A.
Beeching, Mary A.
Bemis, Annie L.
Bickford, Sarah E.
Blaisdell, Adelaide C.
Bond, Annie M.
Bradley, Anna J.
Bradley, Mary
Brown, Jessie
Brown, Lizzie H.
Bryant, Maggie E.
Buckley, Rebecca A.
Bucknam, Josephine A.
Carlton, Ella J.
Carr, Maria F. A.
Chandler, Adelaide D.
Cline, Ada F.
Clough, Annie M.
Colburn, Mary
Colcord, Abby A.
Coleman, Florette
Connor, Alice N.
Corey, Lizzie E.
Cotter, Josephine M.
Conley, Mary E.
Coursey, Mary E.
Cowdin, Ella F.
Cowdrey, Jeannie M.
Crawford, Elizabeth
Cullen, Fannie C.
Curtis, Kittie W.
Cushing, Alice M.
Dale, Sabine F.
Dike, Cora E.
Donnegan, Marcella
Drew, Annie
Eastman, Clara B.
Edwards, Clara
Egerton, Carrie M.
Ellis, Clara
Ellison, Amanda
Fillebrown, Carrie O.
Fitzgerald, Katie E.
Flagg, Clara
Fobes, Carrie
Fobler, Jane F.
Fullarton, Ella L.
Geer, Grace W.
Glawson, Emma C.
Gove, Emma
Gunn, Katie S.
Hanson, Helen I.
Hargrave, Annie
Haskins, Elizabeth D.
Haven, Fannie
Haydn, Carrie W.
Hill, Silence
Hinckley, Louie H.
Hines, Mabel F.
Hobart, Minnie L.
Hollis, Cynthia E.

Howes, Lizzie G.
Hurley, Margaret
Hutchins, Mary F.
Jacobs, Adelaide A.
Johnson, Lucy
Knox, Margaret A.
Lane, Fannie
Leahy, Frances E.
Leary, Mary
Leighton, Amelia L.
Littlefield, Alice L.
Lothrop, Caroline
Marliave, Julia D. C.
Marlow, Kate K.
Mason, M. Ella
McCluer, Alice M. B.
McDermot, Nellie
McDonough, Elizabeth F.
McKay, Cressy
McLaughlin, Sarah J.
Merriam, Ida
Merritt, Mary
Meston, Adelaide
Mitts, Mary E.
Monahan, Mary J.
Montgomery, Mary
Moore, Nellie
Morrison, Rebecca
Murphy, Agnes J.
Noonan, Ellen
Noyes, Eliza W.
O'Connor, Teresa
O'Neil, Rosa
O'Neill, Sarah V.
Oviatt, Martha S.
Paul, Fannie
Peabody, Louie M.
Perry, Leila
Phalon, Alice C.
Piper, Anna D.
Power, Nellie M.
Powers, Mary B.
Putnam, Ella G.
Putnam, Emma C.
Raymond, Mary F.
Richardson, Cevilla R.
Riley, Margaret F.
Roys, Viola G.
Ryan, Alice
Sanford, Minnie
Sawtell, Mary
Slavin, Susie
Smith, Lizzie L.
Smith, Maria J.
Smith, Marion F.
Smith, Mary
Snow, Anna M.
Steel, Helen C.
Stone, Ellen A.
Summers, Katie S.
Talbot, Gertrude
Taylor, Ella M.
Taylor, Ida F.
Tiernay, Mary E.
Torrey, Emeline E.
Towle, Mary E.
Tufts, Henrietta
Vinal, Jennie M.
Wallace, Ellen L.
Waller, Mary E.
Westcott, Belle
Wheelock, Emma
Whitmore, Frances A.
Willard, Fannie L.
Winchell, Mary B.
Wolcott, Hattie F.
Young, Esther — 148.

MIDDLE CLASS.

Abbott, Ellen M.
Adams, Susie M.
Alden, Edith F.
Allen, Georgianna
Allen, Mary E.
Ames, Mary E.
Andrews, Martha L.
Bailey, Mary E.
Bailey, Valetta J.
Ball, Frances E.
Barrett, Alice M.
Bell, Charlotte R.

Bell, Minnie F.
Bennett, Katie E.
Bibbey, Mary L.
Bigelow, Florence J.
Billings, Elizabeth F.
Blodgett, Minnie L.
Booth, Clara H.
Brawley, Margaret E.
Brooks, Emma G.
Brown, Sarah A.
Browning, Mary L.
Bruce, Helen E.
Bryant, Mary E.
Bryant, Sarah
Bulling, Jessie E.
Bumstead, Emma W.
Burgess, Helen
Burton, Annie A.
Carney, Jennie M.
Caulkins, Maria L.
Chadbourne, Elizabeth S.
Chase, Belle M.
Cheney, Jennie A.
Clifford, Anna A.
Collison, Alicia J.
Cooke, Lizzie L.
Coughlin, Julia F.
Courtney, Mary E. A.
Crooke, Flora I.
Crosby, Lena J.
Cunningham, Mary T.
Curtis, Susie W.
Davis, Annie M.
Dennison, Henrietta F.
Dolbeare, Alice G.
Dore, Annie M.
Draffin, Annie E.
Drew, Maggie A.
Dudley, Carrie M.
Ellis, Florence L.
Ellithorpe, Sarah B.
English, Rebecca F.
Evans, Julia A.
Flynn, Minnie E.
Forsaith, Ella F.
Foster, Mary E.
Fuller, Lizzie M.
Fuller, Medora O.
Gainey, Annie F.
Gale, Emma L.
George, Katharine W.
Geyer, Susie E.
Ginniss, Florence E. W.
Gleason, Jennie M.
Goetz, Eva M.
Gogin, Emma C.
Goodwin, Lucy A.
Goodwin, Mary A.
Gookin, Kate R.
Gott, Annie C.
Grady, Mary
Grant, Margaret C.
Gray, Sarah A.
Grover, Lizzie A.
Gupstill, Alma J.
Hagan, Rosanna E.
Hall, Nettie
Hamblin, Florence E.
Harlow, Carrie A.
Harlow, Susan L.
Haydn, Lelia R.
Haynes, Alice F.
Hersey, Clara
Hinckley, Esther M.
Hinman, Belle B.
Hitchcock, Annie C.
Holmes, Evvie T.
Hooper, Grace E.
Hubbard, Carrie C.
Ide, Mary E.
Jameson, Sarah C.
Jones, Mary F.
Josselyn, Mary E.
Kelley, Grace F.
Kendall, Jennie I.
Kieley, Jennie C.
Krueger, Ella G.
Ladd, Lizzie B.
Lanning, Ella F.
Lawrence, Clara A.
Leland, Emma F.
Leonard, Cora E.

Logan, Florence A.
Lombard, Hattie A.
Lombard, Nellie C.
Lougee, Josephine
Mackie, Lillie I.
Major, Mary A.
Mann, Marietta R.
Marks, Albertina M.
Masten, Alida C.
McAloon, Addie M.
McCleary, Emily A.
McGee, Ellen
McNeil, Mary A.
Mellen, Lucy J.
Mendum, Helena C.
Merrill, Frances M.
Moore, Helen M.
Morrison, Martha M.
Morrison, Minnie
Morse, Evelyn E.
Morse, Frances E.
Morse, Lucy M.
Mosely, Clara M.
Mullaly, Jennie
Murtagh, Katie A. T.
Nann, Katie
Nann, Rosa E.
Newell, Mary E.
Nowell, Alice P.
O'Connor, Ellen M.
O'Connor, Sarah J.
Ordway, Mary L.
Overend, Sarah A.
Palmer, Alice W.
Parrott, Jane F.
Patten, Fannie G.
Pearl, Hannah A.
Pendleton, M. Gertrude
Philbrook, May A.
Pickett, Alice E.
Pickett, Katie L.
Pierce, Carrie E.
Pitcher, Mary E.
Plummer, Fannie K.
Plummer, Mary A.
Plummer, Nellie S.
Priest, Mary D.
Read, Alice O.
Reuter, Augusta
Rich, Clara A.
Robbins, Sarah H.
Robinson, Elizabeth J. A.
Robinson, Mary
Robinson, Nellie A. B. M.
Roraback, Ida W.
Ross, Ella A.
Sampson, Olive S.
Sargent Mary F.
Schafer, Mary E.
Sherman, Effie D.
Shurtleff, Hannah S.
Shute, Sophia, A.
Simonds, Carrie E.
Simpson, Anna E.
Slade, Louisa P.
Smith, Lottie H.
Smith, Louisa P.
Snow, Jennie M.
Somes, Eldora E.
Stearnes, Susie C.
Stevens, Clara R.
Stevens, Lizzie F.
Stevenson, Harriet E.
Stone, Julia
Stratton, Winella W.
Strout, Alma E.
Stumpf, Sarah E.
Sutherland, Lillie B. W.
Sweet, Louise M.
Swindelhurst, Susan
Symonds, Mary E.
Tenney, Grace G.
Thornton, Julia W.
Titcomb, Mary A.
Titus, Mary E.
Toland, Sarah E.
Towne, Susan E.
Tracy, Catherine J.
Waite, Addie C.
Walsh, Ellen B.
Ward, Mary
Welch, Anna C.

Weston, Annie W.
Weston, M. Emma
Whidden, Lizzie D.
White, Annie A.
White, Manella G.
Whiton, Florence A.
Wilson, Mary J. E.
Wright, Mattie F. — 204.

JUNIOR CLASS.

Adams, Lizzie Luce
Adams, Sarah E.
Alexander, Mary L.
Allen, Pauline E.
Alley, Sarah A.
Allison, Harriet E.
Andrews, Mary A.
Atwood, Sara E.
Atwood, Flora C.
Atwood, Dora
Avery, Annie F.
Babson, Abby H.
Badlam, Mary E.
Bailey, Fannie T.
Bailey, Jessie H.
Baker, Mary W.
Balch, Zoe T.
Barnicoat, Alice A.
Bartlett, Edith S.
Benedict, Emily
Bishop, Ida J.
Botto, Lillian
Boyce, Emma
Bradlee, Ella F.
Bradley, Ella
Brady, Mary E.
Brennan, Annie M.
Briggs, Emma F.
Brigham, Georgiana
Bright, Mary L.
Brimbecom, Lizzie H.
Brimbecom, Mary A.
Brown, Carrie L.
Brown, Grace C.
Brown, Lucy L.
Bryant, Carrie H.
Buckley, Martha G.
Bugbee, Mary E.
Burditt, Harriet A.
Burgess, Mary C.
Burrows, Mary H.
Burton, Ida M.
Butman, Gertrude W.
Capron, Kate C.
Carey, Nellie L.
Cayvan, Georgie E.
Chandler, Gertrude A.
Chenery, Hattie M.
Cherrington, Claudine E.
Choate, Sarah L.
Clarke, Martha G.
Cleary, Margaret
Cliffe, Lizzie F.
Cline, Adele B.
Cobb, Helen
Collier, Florence E.
Cook, Etta J.
Coolidge, Eleonora R.
Coolidge, Sarah L.
Cormich, Fannie A.
Coughlin, Eveline M.
Coulter, Rebecca
Crabtre, Annie C.
Crane, Emma F.
Crocker, Minnie P.
Crooker, Ellen B.
Cundy, Alice A.
Curry, Margaret L.
Curtis, Eulalie L.
Cushing, Ethel
Cushing, Arabelle B.
Danforth, Gertrude E.
Darrow, Lydia D.
Davenport, Mary L.
Dean, Clitheroe
Dexter, Florence E.
Dickerson, Julia A.
Doe, Ellen L.
Doherty, Mary
Donaldson, Jennie
Dow, Sarah F.

Dowling, Ada J.
Drake, Agnes L.
Drake, Florence I.
Driscoll, Mary E.
Drisko, Laura M.
Dunn, Mary C.
Edmunds, Roxalana P.
Edwards, Eloise S.
Eliot, Emily M.
Emery, Ella W.
Emmons, Florence A.
Enos, Aurelia
Evans, Lottie P.
Everett, Elizabeth H.
Fagan, Annie E.
Fairbanks, Carrie D.
Farnham, Mary H.
Farren, Helena G.
Farrer, Cora D.
Farrington, Millie B.
Ferdinand, Lizzie
Fineran, Catharine J.
Fitzgerald, Eliza G.
Flagg, Ida C.
Floyd, Emily J.
Folsom, Nellie
Foote, Mary L.
Forbush, Angeline S.
Foster, Mary G.
Frost, Sarah A.
Fulton, Jennie D.
Gates, Ada
Glass, Sarah R.
Glines, Augusta O.
Goodrich, Mary L.
Goodwin, Ella A.
Gott, Genera E.
Gould, Elsie M.
Gould, Emma F.
Gourley, Letitia E.
Grant, Emma C.
Gray, Lizzie L.
Greer, Nellie F.
Griffin, Ellen H.
Gunn, Eliza
Gustin, Nellie M.
Gibson, Jennie, C.
Hagan, Mary F.
Hahn, Carrie S.
Hall, Catharine M.
Halliday, Ida E.
Harding, Alice A.
Healey, Katie E.
Hertkorn, Carrie J.
Heywood, Alice E.
Heywood, Lucy B.
Higgins, Rosa A.
High, Belle A.
Hill, Jennie L.
Hill, M. Esther
Hill, Sarah F.
Hilliard, Carrie E.
Hobbs, Stella M.
Hodges, Mary S.
Holland, Maggie E.
Holmes, Therese C.
Howard, Emma C.
Hudson, Clara E.
Humphrey, Mary J.
Huntress, Jennie W.
Hutchins, Ella C.
Hutchinson, Jennie
Hyland, Emma W.
Jackson, Adeline B.
Jacobs, Nellie J.
Jameson, Helen M.
Jenkins, Effie M.
Johnson, Cora M.
Jones, Mary E. R.
Joy, Emma F.
Keats, Eva M.
Keenan, Mary J.
Keenan, Minnie F.
Kelley, Lizzie C.
Kelley, Margaret
Kelliher, Elinor M.
Kennemon, Matilda J.
Kenney, E. Idella
Kent, Gertrude E.
Kimball, Hattie L.
Kimball, Kate
Kyle, Mary A.

Lambert, Mary F.
Learned, Cara W.
Learned, Kittie A.
Leland, Ada
Leland, Ella A.
Littlefield, Annie C.
Lonergan, Theresa C.
Lothrop, Charlotte N.
Lynde, Emma
Macomber, Ella L.
Maguire, Agnes E.
Mansfield, Addie S.
Mayo, Susan J.
McCarthy, Mary A.
McCartney, Mary E.
McCleary, Maria L.
McDonald, Bessie
McDonald, Lucy E.
McDonald, Mary J.
McGlinchey, Hannah L.
McIntosh, Jennie
McKenny, Adelle H.
McNamara, Mary
Merriam, Sarah E.
Merrill, Carrie
Merrill, Lucy
Meserve, Alice S.
Metcalf, Jennie E.
Middleby, Annie B.
Millett, Emily M.
Mills, Jennie P.
Morrissey, Lizzie M.
Moulton, Emily F.
Mullen, Susan F.
Murphy, Margaret C.
Nelson, Maria L.
Newcomb, Frances R.
Nichols, Esther F.
Nicholson, Martha
Nolan, Alice M.
Nowell, Charlotte E.
O'Connor, Mary E.
Page, Caroline E.
Palmer, Mary
Patterson, Nellie M.
Paul, Madeline J.
Pecker, Annie J.
Pentland, Ella L.
Perry, Adelaide F.
Phippen, Annah L.
Pingree, Ina
Piper, Harriet
Pitman, Minnie E.
Polley, Louise F.
Porter, Mary E.
Power, Kate M.
Powers, Josie A.
Pratt, Helen C.
Putnam, Flora L.
Putney, Lizzie F.
Ramsdell, Ida M.
Redlon, Juliette F
Regan, Annie J.
Rice, Hattie J.
Robinson, Clara E.
Robinson, Edith V.
Rogers, Abbie L.
Rowe, Grace
Rust, Helen W.
Rust, Winniford A.
Schollard, Joanna A.
Seaman, Alice A.
Seavey, Adeline E.
Shapleigh, Ida F.
Shaw, Hattie
Shaw, Helen A.
Shea, Nellie M. F.
Shepard, Alice
Shepard, Lizzie G.
Sherer, Mary E.
Shine, Mary E.
Shove, Lucy E.
Sidwell, Annie
Simpson, Ida F.
Sloane, Susie H.
Smith, Cornelia D.
Smith, Henrietta
Snapp, Mary A.
Snow, Ellen C.
Somerby, Mabel E.
Souther, Annie L.
Stafford, Lucy C.

Stearns, Marian C.
Stuart, Amanda M.
Summers, Carrie H.
Swain, Helen M.
Swett, Minnie B.
Talbot, Linnie E.
Thayer, Mabel C.
Tucker, Hattie M.
Tucker, Nellie B.
Turner, Mary C.
Upham, Mary D.
Waite, Lizzie F.
Wales, Lizzie S.
Wallis, Abbie E.
Walsh, Mary C.
Ward, Martha E.
Weeks, Isabel M.
Welch, Lizzie A.
White, Carrie
White, Mary E.
White, Nellie M.
Whitney, Ellen A.
Wightman, Florence A.
Wilcox, Mary L.
Wilder, Mary E.
Williams, Annie T.
Williams, Augusta M.
Wilson, Lizzie E.
Wilson, Sarah W.
Winsor, Annie T.
Wise, Alice
Wood, Nellie F.
Woodman, Mary L. — 298.

Whole number — 666.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE ROXBURY HIGH SCHOOL, SEPTEMBER, 1872.

HEAD-MASTER.

S. M. WESTON.

HEAD-ASSISTANT.

M. LOUISE TINCKER.

ASSISTANTS.

EMILY WEEKS,
ELIZA D. GARDNER,
HELEN A. GARDNER,
EDNA F. CALDER.

TEACHER OF FRENCH.

MATHILDE DE MALTCHYCÉ.

TEACHER OF MUSIC.

JULIUS EICHBERG.

TEACHER OF DRAWING.

BENJAMIN F. NUTTING.

TEACHER OF GERMAN.

JOHN F. STEIN.

INSTRUCTOR IN MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

EX-SENIORS.

Allen, Ida Blanche
Bumstead, Anna Wells
Edmands, Anna Mumford
Faunce, Emily G.
Faxon, Maria Davenport
Frye, Mary Lane
Gray, Nellie
Lingham, Emma Isadore
Manning, Julia Frances
Moore, Mary Malvina
Pearson, Susie A.
Thomas, Minnie Evelyn
Washburn, Jeanet Palmer
Washburn, Emily Persis

SENIOR CLASS.

Boys.

Allen, Horace Gwynne
Bacon, Horace
Bell, William George
Carter, Henry Hall
Clark, William Lewis
Coffin, George
Crowley, Daniel Joseph
Franklin, Charles Webster
Gates, John James
Goldsmith, Simon
Hammond, George Francis
Howe, James, Jr.
Howe, Leonard Nutter
Hutchinson, Henry Dana
Kelly, Henry William
Mulvey, James Samuel
Nevers, Marshall
Parker, Charles
Pierce, Charles Taylor
Peirce, Edward
Rice, David
Riley, John Peabody
Sanborn, Willey Marshall
Shaughnessy, Thomas Francis
Spangler, Frank
Sullivan, Richard Patrick
Walker, Charles Howard
Woodward, Clarence Elliot
York, Nelson Potter

Girls.

Burrell, Sarah Southack
Clark, Ella Eudora
Clark, Justina Bradford
Clement, Hattie Frances
Crosby, Sarah Alephonsus
Crosby, Mary Elizabeth
Cutter, Millie Antoinette
Day, Sarah Louisa
Dove, Amelia Jones
Grady, Maggie
Griffeth, Lucie Ellis
Harris, Susan Burley
Howe, Florence Ada
Killion, Delia Teresa
Kohl, Elizabeth
Littlefield, Hattie Augusta
Mitchell, Margaret Jane
Morse, Annie Wallace
Mulliken, Mary Ella
Mulrey, Elizabeth Dean
Newcomb, Annie Louise
Perrin, Mary Esther
Pishon, Eva
Prince, Sarah Frances
Ray, Katie Ellen
Richards, Celia Gertrude
Robinson, Annie Dexter
Seaver, Harriet Emma
Wheelock, Annie
Worthen, Marietta

MIDDLE CLASS.

Boys.

Adams, Harry Franklin
Anderson, William Frederic
Ayres, Isaac Hull, Jr.
Bardenhoff, Charles Frederic
Berry, William Frederic
Brooks, Richard Joseph
Browne, Louis L'Ecluse
Carter, Herbert Norton
Cordingley, William Robert
Costello, John Edward
Crowley, John Thomas
Engel, Joseph Isaac
Faxon, William Henry
Fowle, William Parker, Jr.
Frothingham, Edwin
Frost, Walter Sprague
Gray, William
Heard, John Reed
Hodges, Edward C.
Hodges, Frank Herbert
Holbrook, Joseph Barnard
Hunneman, William Cooper
Klous, Henry Dudley

Lang, George Henry
Libby, Clarence Jenness
Lockney, John Francis
McGrady, James Daniel
Monroe, George Ellis
Parry, Charles Edward
Rice, Freeman Gill
Rumrill, Frank
Ryan, James Francis
Ryerson, Frank Edward
Scanlan, Michael James
Stockwell, George Stephen
Sweat, Thacher
Swain, William Newman
Weil, August
White, Arthur Howard
Williams, Samuel

Girls.

Aull, Elizabeth Ellen
Bean, Mary Heywood
Bowdlear, Ellen Hadley
Cotter, Elizabeth
Curtis, Carrie Walker
Deane, Mary Emma
Deane, Sarah Lizzie
Dibblee, Agnes Ide
Gardner, Alice Jane
Grand, Eliza Theresa
Hart, Lydia Jane
Haynes, Catherine
Hewitt, Mary Kallock
Leavett, Ellen Willietta
Merrill, Emma Louise
Morrill, Josephine Russell
Mulliken, Harriet Davenport
Murphy, Mary Agnes
Murphy, Julia Mary
O'Connell, Fanny Louise
Parker, Abbie Durant
Pike, Mary Olive
Pishon, Lucretia
Rider, Francena Ella
Scarlett, Margaret B. E.
Shaw, Emma Cora
Shedd, Ella Jane
Smith, Addie Martha
Waite, Salome Anthony
Ware, Mary Brastow
White, Abbie Elizabeth

THIRD CLASS.

Boys.

Adams, Charles Edwin
Allen, Harry Mortimer
Bowles, Joseph Brigham
Carleton, Elbridge Winthrop
Connell, Dennis Benedict
Crosby, William Henry
Chadwick, Frederic F.
Cose, Edwin William
Cram, Sylvanus Rich
Currier, Edward Pfaff
Decker, Ferdinand George
Dolan, Edwin Joseph
Donnelly, Walter William
Foley, Frank Matthew
Grady, Thomas
Gray, Henry
Hawkins, Daniel Hoff
Hersey, George Edward
Holmes, Arthur Thomas
Howe, Edwin Allyn
Hunter, Frederic Spurr
Hutchins, John Hurd
Jacobs, Arthur Loring
Karson, Alden John
Kelley, Robert Philip
Kelley, John Bernard
Kendall, Fred
O'Conner, Williams Joseph
O'Donnell, George William
Looby, James Edward
Lord, Charles Frederick
Lynch, Samuel B.
McDonald, Charles Howard
McGowan, Henry George
Munroe, William Winship
Mulvey, James Paul

Rivinius, George Franklin
Rousmanière, Edmund Swett
Schroeffel, John Alfred
Shea, John Francis
Sierney, John
Smith, Frank Cyrus
Swan, William Osborn
Sparhawk, George
Sutton, Samuel Fernald
Wallon, August C. F.
Wentworth, Edward Spenser
Wyman, William Hutchinson

THIRD CLASS.

Girls.

Alexander, Carrie Eugenia
Barton, Ida Louise
Bean, Charlotte Elizabeth
Bemis, Lizzie A.
Caldwell, Harriet Eliza
Carleton, Lizzie Marion
Cordeiro, Alice Margarida B.
Davis, Sarah Ellen Banks
Doyle, Mary Ann
Fineran, Hannah Gertrude
Foster, Emma L.
Gerber, Emma Jennie
Green, Ella May
Gullbrandson, Annie Sophia
Hildreth, Minnie Caroline
Heidenreich, Bertha E.
Howe, Josephine Joselyn
Houghton, Elizabeth
Hunneman, Elizabeth Allibone
Kilroy, Esther
Leavett, Harriet Woods
Lincoln, Minnie Louise
Manning, Emma Louise
McLaughlin, Elizabeth J.
McLellan, Annie Corinne
McHenry, Lizzie Cushman
Minns, Grace Winchester
Moody, Ella
Moulton, Helen Lyford
Newsome, Jane Margaret
O'Connell, Elizabeth Eleanor
Partridge, Flora Almira
Pevear, Nettie G.
Putnam, Emma
Richards, Annie Bullard
Ryan, Mary Catherine
Seaver, Annie Isabella
Seavens, Annie Walton
Stevens, Grace Cornelia
Stocking, Ella Josephine
Watson, Mary Emma
Whelton, Annie Josephine

SUMMARY.

Ex-Seniors	14
First Class	59
Second Class . . .	71
Third Class	90
Total	234

DORCHESTER HIGH SCHOOL.

The Dorchester High School continues to be in good condition, and is faithfully doing the work allotted to it in the educational system of the City of Boston. This school was established in 1852, on the plan of the ordinary Massachusetts High School, as contemplated by the Legislature, to supplement with a course of higher education the instruction given in the Grammar Schools of the town, which has since been annexed to the city. It still retains this character, and in this respect is essentially different from the other high schools among which it is classed, and with which it is compared. The Public Latin School is intended solely for young men who intend to enter college; the English High School for those young men who desire a general advanced culture as a preparation for active business; and the Girls' High School for the education of young ladies in the higher branches. The Dorchester High School receives pupils of all these three classes, fitting young men for college, and supplementing the education of both sexes in the advanced studies. The Roxbury High School is practically relieved of the work of fitting young men for college by the Roxbury Latin School, — a most excellent institution, free to its pupils, but not under the control of the School Committee. The Dorchester High School, therefore, is exceptional in its character, when compared with any of the other high schools of the city.

While it is doubtless true that a careful division of labor in teaching, as well as in mercantile and mechanical pursuits, produces the best results, there are many advantages to be derived from educating the sexes together, after the pupils have reached the years of discretion, — which is perhaps a rather indefinite period, — and from placing the boy who is fitting for the university beside the one who is preparing for the counting-room, the machine-shop, or the farm. It may be questioned whether the gain in mere scholastic training is not overbalanced by the loss of those moral and social influences, — whose refining power none deny, — which exist in a school where both sexes meet every day on the same plane as in active life, and where the future clergyman and physician are not separated from the future merchant, mechanic, and farmer. The friendships contracted in school are often life-long, and cherished above all others, because they are formed in the most impressible years of life. A "Latin School" is to prepare boys for college; and it is desirable that its pupils should commençe their classical training even before they have been graduated from the Grammar School. At the age of ten or twelve they are brought together, and kept together for the long period of six years; which is followed by four years in the university, and two or three more in the professional school. All the students of this school have substantially one aim. In all their dozen years of student life they influence, and are influenced by each other only. They cling together, and the strong friends of after life are likely to be all graduates of colleges. Some time in their career, many of them may look in vain for powerful friends among the successful merchants, mechanics and farmers of the land. But the greater advantage to them would be the actual contact in school and its associations with those of different aims; with those of the other sex; and with the rougher but more practical elements of every-day life.

Undoubtedly there are advantages in the union of all classes of students under the same school-house roof, though, from the merely educational stand-point, we are accustomed to regard them only as compensations, rather than as positive benefits. In such a school there are incentives to study and good conduct, and influences which favor the development of a true dignity of character, that do not exist in the special schools. But regarded even from the educational stand-point the Dorchester High School need not apologize for its results. Tried by the college examinations of its graduates, it has an excellent record, and very seldom has one of its pupils, in applying to Harvard or elsewhere, for admission, been subjected to a condition.

Only in the largest cities is this division of the educational programme practicable; and it is a question whether the three large special high schools of Boston would not achieve more satisfactory results if their differing elements were united in three establishments on the general plan of the "Town High School." Perhaps, if they were organized on this plan, the standard of classical attainments would not be so high as at present, but it is possible that the students of both sexes would be better prepared, intellectually and morally, for the duties of life.

The people of the Dorchester District are entitled to the same educational privileges as the other sections of the city; and the City Government and the School Committee, in the finishing and furnishing of the edifice for this high school, have liberally voted all that was desired to make the building and its appointments equal to anything, not only in the city, but in the whole country. The Board recently made the salary of the head-master the same as that of the other heads of the high schools; thus removing the only distinction between him and them. This is as it should be, for an inferior salary is correctly interpreted as procuring an inferior teacher, or at least one who is looking for a more lucrative situation in the older and more densely peopled section of the city. Dorchester is entitled to a reasonable consideration on account of its peculiar circumstances. Though some portions of it are, as an eloquent member of the board declaimed in his speech, "a howling wilderness," the footprints of civilization and progress are to be found within its borders. The "howl" is drowned by the music of the saw and the hammer of the builder, so that the assessors could not hear the discordant sound when they marked up the valuation of the ward *six and three-quarters millions of dollars* in a single year. This section of the city is increasing in population and taxable valuation with almost unexampled rapidity. It needs, and has received, the judicious fostering of the City Government in the various improvements introduced. The city has levelled hills, extended and widened streets, burrowed through miles of rock to lay down water-pipe, spread the wires of the fire-alarm over the territory, built sewers, and scattered the police over the new ward, in order to place the citizens of the district on an equality with those of the other sections of the city; in order to make it a desirable place of residence, and to develop its business resources. It has made these improvements for the future rather than the present, satisfied that the growth of the city in this new territory will fully justify the liberal expenditure bestowed upon it.

In bidding for the future prosperity of a city, a town, or a section of either, its educational advantages are an important element for consideration; and the future growth of the new ward will depend to a very great extent upon the character and quality of its schools. The merchant, the mechanic, or the laborer will not build his house and make his home where the schools are not as good as the best, or are not conveniently accessible. "Are the schools as good as those in the other sections of the city?" is the question of the citizen, driven by the march of commerce to seek a home in the new territory of the city, or beyond its limits.

With this view of the needs of the district, the Committee of the Dorchester High School are very glad to be able to say that the school under their charge is the equal of any other High School in the city; that its teachers receive the same salary; and that its facilities for educating the sons and daughters of the people are as good as the best elsewhere.

The prosperity of the Dorchester High School must depend, to a considerable extent, upon the estimate which the people of the district place upon the school. Only to the honor of the people can it be said that they seek the best school for the education of their sons and daughters; and they will overcome many difficulties, and submit to many sacrifices, rather than send them to an inferior school. All that could be done to make the school worthy of the confidence of the citizens of this section of the city has been done; and, while it would be highly improper for the committee to make any comparisons between it and others of its class, they hope the residents of Dorchester will carefully examine the subject for themselves. It is suggested that a visit to the school, a survey of its elegant buildings, and its educational appointments, and an hour spent in the various class-rooms, would convince parents that the institution is worthy of the city which sustains it. Those who have examined the matter the most thoroughly are satisfied that it is better, as a general rule, for advanced pupils residing in Dorchester, especially young ladies, to attend this school, though the other high schools of the city are open to them.

The opinions which prevail in the community in regard to the amount of school work to be required of pupils are many and various. Some appear to believe that no real work is done, because the scholars are fat, strong and healthy; that pale faces and puny forms are the only reliable evidences of hard study; while others are confident that the schools cause an annual "slaughter of the innocents," by requiring too much of the pupils. It is very difficult to adjust the lessons of a class to the average ability of its members; and the most careful and judicious instructor may overwork a portion while an equal number are not compelled to study even a single hour out of school. The public sentiment of our time is violently opposed to overwork; and it is safer to do too little than too much. The methods of instruction, especially in the languages, have been greatly improved; and the dry labor of memorizing is, in a great measure, superseded by the intelligent cultivation of the mind. More than ever before, the obtaining of ideas, rather than words, is the aim of the teacher. It is not now considered necessary to commit to memory the rules and paradigms of the Latin, French, or German grammar before the learner is allowed to put two words of the language together, and know their meaning. Months of hard, dry study are thus saved every year; and the pupil is even more proficient in the end.

It is not now required that a scholar should be disgusted with a science or a language, before he can make any progress in learning it. Of course, under this system, scholars are less fluent and less showy in recitations; but their mental powers are better developed, and they carry away more from the school in the end. Lectures, conversations, experiments and illustrations take the place of the meaningless recitals of the words of the text-books. The pupils, even of the high schools, need not be cheerless and unhappy; need not be overburdened with the cares of the school-room; and the system of education which makes them so is faulty. What boys and girls dislike the most is not necessarily that which will do them the most good. Perhaps the path of learning cannot be made pleasant to all, but the teacher and the system which do the most to make it so, the most nearly conform to the spirit of the age.

As it seems eminently proper that the head-master of the school should have an opportunity to express his views upon topics relating to the welfare of the institution under his charge,.the chairman invited him to prepare a report, which is here inserted in full: —

REPORT OF THE HEAD-MASTER.

It is a question of some importance at this time, whether the course of High-school study does not require a rearrangement, or perhaps I should rather say, an extension in respect to time.

Twenty-five years ago our courses of High-school study were strictly intellectual. In the majority of schools the basis of education was the study of the pure mathematics. In examinations for admission to these schools, more importance was attached to arithmetic than to any other branch of instruction. The rank of mathematics in education was like that of charity among the moral virtues. Excellence in this department covered multitudes of geographical and grammatical shortcomings, while hundreds of boys and girls, who would have done honor to our High Schools, have been denied admission, merely because they lacked that quality which Sir William Hamilton ranks among the lower endowments of the human mind. As arithmetic ruled at the examination for admission, so algebra and geometry became the great tests of excellence during the High-school course. Want of power at the blackboard was considered a sure sign of intellectual weakness; and not only were hundreds, as I have already said, denied admission for want of this power, but hundreds more who gained admission were soon driven from the High School because they could not get seventy-five or eighty per cent. in algebra or geometry.

But better times are beginning to dawn upon our schools. Educators are beginning to believe and to practise the important truth which Paul taught centuries ago, that there are "diversities of gifts" where there is no want of high and even brilliant powers. It is somewhat sad to think that the man who has been ranked as the first inductive philosopher of the nineteenth century could hardly have gained admission to a New England High School. Faraday, on one occasion, boasted that he had once in his life performed a mathematical calculation, and that was when he turned the handle of Babbage's calculating machine. Instead of the severe cultivation of the intellect, and that, too, upon a "single phase," it is now beginning to be felt that there are other and even higher powers to be developed. We have already taken important steps in the training of the body as the instrument or servant of the mind, and in the mind itself there are recognized creative, æsthetic, and imitative faculties, which we can no longer afford to neglect. And so we are now pushing our education vigorously in the direction of art and literature. Music, unknown in our schools a quarter of a century ago, or viewed only with suspicion and distrust, as tending to divert attention from the "*solid branches*," is now as well established in our schools as geography; and drawing for which, in former years, many a poor fellow has suffered the extreme penalty of school law, is now exciting the zealousy of all the ologies and osophies, lest their rights should be invaded or their claims disallowed.

It is but the simple truth to say that since our courses of High-school study were first marked out, there has been added to them work, which, when rightly performed, must occupy, at least, twenty-five per cent. of the time. Again, the amount of work in the original course has been increased by nearly or quite an equal amount. This increased demand has been met in two ways.

First, better methods of teaching have enabled teachers to do more work in the same time; and, in the second place, the relief afforded by variety of occupation has greatly diminished the burden imposed by these additional requirements.

But notwithstanding this, the question may be fairly asked, Does not our High-school work demand more time? Would it not be better for all concerned, if our minimum course for securing a diploma were not four years instead of three? It is my firm conviction that this would be the case, and this conviction has been greatly strengthened by the experience of the past year. Those who have not had occasion to notice it can hardly realize how much increase of power and attainment will result from a fourth year of honest and earnest study, following directly upon the ordinary three-years' course of the Boston High Schools. This fourth year, industriously spent, is worth half of the preceding three; and it is worth all the more when spent with teachers already acquainted with a scholar's mental and moral capacities.

To give a more accurate idea of the increase of labor at present, as compared with that of fifteen years since, it will be well to state the case a little more minutely. In the course of a week we now give two hours to military drill, two to drawing, and two to music, besides, at least, twelve hours to special teachers in French and German. The time occupied by the special teachers in modern languages covers, in part, time which was previously taken by the regular teachers of the school; that is to say, the time appropriated to the special teachers in French and German is not wholly additional to the work previously performed in the school. It is safe, however, to say that the time given to these exercises amounts, in the aggregate, to ten hours additional work in the week. It is proper to state, in this connection, that the age required for admission to our colleges is now considerably greater than formerly. In the case of Harvard College, the actual average is now found to be four years more than was formerly required. This fact indicates, what we all know to be the case, that the requirements for admission to our colleges have not only been increased in quantity, but in quality as well. This increased demand on the part of the colleges naturally affects all the lower schools, whether English or classical.

The course of study in the Dorchester High School differs from the other High Schools of the city, inasmuch as the classical and English courses of instruction are combined, and both sexes are allowed and encouraged to pursue these courses to the extent of a full preparation for Harvard College. The advantages of this complete course seem to me so great that I venture briefly to state them. It is the desire of many parents that their sons should go to college, and this desire leads many to put their boys at a very early age upon what is called a course of classical study, without any regard to their tastes or capacities. In a majority of cases it is found in the course of a year or two that the boys are not fitted for classical studies; that their tastes and capacities are mercantile' mechanical or scientific; and that a continuance in the chosen course must result in a disastrous failure, or, at best, in but moderate success. Hence it often happens that the boys are put upon a different course of study in another school, but not, it may be, until they have some degree of self-confidence in view of their imaginary failure. Their apparent failure, however, was no fault of theirs, but the result of a want of good judgment on the part of their parents. The boys were too young to judge for themselves, and their parents followed the dictates of their feelings, and not of sound and enlightened judgments.

If, now, the boys had been qualified for a High-school course by a full term at the Grammar Schools, and the choice of the parent had been deferred until the opening faculties of their sons had furnished them ground for a wise judgment, much time would have been saved, and, what is of far more importance, a lifelong sense of mortification from an imaginary failure. I have seen in so many cases the evils resulting of this putting asunder what God hath joined together, that I often ask myself, when will this folly cease? This divorcement of classical and English studies does not exist in college; why, then, should it in preparation for college? We have the intimation already from Cambridge, that candidates for admission there will be examined in the elements of the natural sciences as well as in Latin, Greek, and mathematics. We have inherited this absurdity from the Grammar Schools of England, and just in proportion to its absurdity will be the strength of the tenacity with which some will cling to it. "What reason never designed," says Dr. Johnson, "reason can never account for," and perhaps he might have added, reason will have the greatest difficulty in removing. Among the innumerable mischiefs resulting from the separation of classical and scientific studies is the notion that there is a certain superiority in classical over scientific pursuits. And the boy who has been prepared for college in an exclusively classical school often goes to college with a kind of contempt for scientific pursuits, and for those who are specially devoted to them. This acts as a great hindrance to his own progress, and when it is too late to correct his error, he finds that he has undervalued not only some of the most essential parts of a liberal education, but overlooked the great forces which underlie modern civilization.

I beg leave to speak an earnest word in behalf of the rights of girls to the same classical culture as boys. The history of our school bears ample testimony to the ability of young ladies to do well, and in the same time, all the work required of young men in preparation for college. We have girls now pursuing the course of study required for admission to college who would be ornaments to any classical school in the country. And when I see the grace, the facility, and the ability with which they master Cicero, Virgil, Xenophon, and Homer, I cannot but feel the injustice which denies them the same rights of study that are enjoyed by the male sex. When shall we have complete freedom in education? When shall we divest ourselves of prejudice and precedents, and treat the human soul, whether male or female, as the image and noblest creation of its Maker?

ELBRIDGE SMITH,
Head-master.

The discipline of the Dorchester High School is not such as would find favor with the "martinet of a school-master," who believes that the salvation of his school depends upon the precision with which the "third position" is taken and kept by his pupils. A certain degree of freedom, not inconsistent with the progress of the school, prevails. The scholars are not unnecessarily hampered with forms and restraints which are needful in the schools for younger scholars. During the year, not a pupil has been reported to the Committee — as provided in the Regulations — for continued misconduct. The relations between the teachers and the pupils have been of the pleasantest character; and there has not been a case of corporal punishment during the administration of the present head-master, if there ever was one.

The excellent care taken of the building reflects the highest credit, not only upon the head-master and the janitor, but also upon the pupils. Not a mark nor a scratch, nor any wilful defacement of the premises can be found, even in those parts where the vandalism of school-boys is most likely to be exhibited.

At the close of the year, very much to the regret of the Committee, her associate teachers, and the pupils, the school was deprived of the valuable services and the excellent influence of Miss Mary F. Porter, who went from her chosen field to brighten the lot of an accomplished educational laborer; and his gain is certainly our loss. For several years she was a very faithful and efficient instructor in the school; and she carries with her into her new sphere in life the best wishes of the Committee, teachers, and scholars, for her future prosperity and happiness. Miss Porter's place was filled by the appointment of Miss Luther, a lady of much experience, and many accomplishments, whose temporary service in the school had prepared her for the position, and demonstrated her fitness for it.

At the Annual Exhibition, in July, the hall was filled to its utmost capacity by the parents and friends of the pupils, who thus manifested their interest in the school. The diplomas of graduation were presented to forty-four scholars. The only graduate of the classical course, Frank Wesley Burnham, was admitted to Harvard College with only an unimportant "condition" in modern geography. At the exhibition, the graduating class presented to the school a very large and handsomely mounted photograph of the Roman Forum, as the class of the preceding year had of the Coliseum at Rome. These useful and appropriate pictures were received by the chairman, and now adorn the walls of the hall, to remain there as memorials of the classes that presented them.

This report cannot properly be closed without an allusion to the special teachers in Music, Drawing, Military Drill, French and German, who have not only discharged their several duties faithfully, but have manifested an earnest interest in the welfare of the school, and have endeavored to harmonize their labors with the general plan of the head-master; and generally they have merited and won the respect and esteem of the pupils.

All the applicants for admission at the close of the year were received, either after the first or the second examination, the questions being the same as those used at the other High Schools. At the first, only one failed to obtain the required per cent. of correct answers, the standard being the same as at other schools; a fact which is very creditable to the Grammar Schools of the district. Of the fifty-two applicants admitted.

7	were from the Dorchester	Everett	School.
0	" " "	Gibson	"
16	" " "	Harris	"
4	" " "	Mather	"
3	" " "	Minot	"
12	" " "	Stoughton	"
4	" " "	Tileston	"
6	" " "	Other sources.	
52			

In conclusion, the Committee commend the Dorchester High School to the consideration of the citizens of the ward in which it is located, with the hope that they will regard it as an institution liberally sustained by the city for their exclusive use and benefit; and that they will join the Committee in all needed efforts to improve its condition and promote its prosperity.

For the Committee of the Dorchester High School,

WILLIAM T. ADAMS,

Chairman.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE DORCHESTER HIGH SCHOOL, SEPT., 1872.

HEAD-MASTER.

ELBRIDGE SMITH.

HEAD-ASSISTANT.

MARY WENTWORTH HALL.

ASSISTANTS.

REBECCA VINAL HUMPHREY. ELLEN GERMAINE FISHER.
HARRIET BYRON LUTHER.

TEACHER OF MUSIC.

JULIUS EICHBERG.

TEACHER OF DRAWING.

MERCY A. BAILEY.

TEACHER OF FRENCH.

CHARLES DE LAGARLIERE.

TEACHER OF GERMAN.

JOHN F. STEIN.

DRILL-MASTER.

LIEUT.-COL. HOBART MOORE.

PUPILS.

EX-SENIORS.

Babcock, David Marks
Bent, William Danforth
Ferry, George Harry
Gorham, George Congdon
Gardner, Clifford
Kendall, Walter Gardner
Monroe, Stephen A. Douglas
Preston, John Aiken
Temple, William Franklin

Girls.

Allbright, Susan Broughton
Brooks, Antoinette Parsons
Capen, Cordelia Rosanna
French, Mary Elizabeth
Hawes, Mary Hardwell
Mann, Mary Ellen
Melville, Caroline Frances
Payson, Anna Holden
Pope, Anna French
Swan, Ella French
Whiton, Esther Rebecca

SENIORS.

Boys.

Baker, Frank Woods
Baynton, Walter
Childs, Harold Chessman
Colgan, James Arnold
Eastman, Edgar Frank
Edwards, Thomas Pearce
Gorham, Sherwood Field
Knight, Edwin Augustus
Leavitt, George Oscar
Lyons, Walter Shepard
Upham, Charles Holbrook
Sproul, Arthur Eliot
White, Willie Gardner

Girls.

Bailey, Alice Howard
Brown, Fannie Bates
Caldoff, Mary Ann
Coffin, Harriet
Cushing, Anna Quincy
Greeley, Ella Louisa
Mann, Elizabeth Benson
Mann, Mary Susan
Pratt, May Estella
Preston, Edith Lee
Roper, Mary Isabella
Russell, Emma Frances
Sanborn, Mary Elizabeth
Sheridan, Mary Jane
Thayer, Sarah Munroe
Weis, Anna Lora
Weis, Mary Blake
Welles, Emma Geneva
Williams, Susan Eliot

MIDDLE CLASS.

Boys.

Allbright, William Broughton
Bent, Charles Henry
Chadbourne, Henry
Coombs, Frank
Green, Alfred Pingree
Hemmenway, Edward Augustus
Huntington, Clarence Williams
Kendall, Charles Francis
Kerk, Joseph
Payson, Horace Blake
Perrin, William Brown
Robinson, James Leavitt
Russell, Thomas Joseph
Smith, George Clinton
Ufford, Charles Augustus
Upham, Charles

Girls.

Barlow, Abby Ella
Brooks, Agnes Elvira
Brown, Elizabeth Woodford
Carlton, Mary Jane Milly
Cook, Hattie M.
Edwards, Elizabeth Caroline
Esterbrooks, Emma Martha
Emery, Carrie Maria
Goodale, Mary Emma
Hersey, Louisa Eliza
Kendrick, Clara Bussey
Merriam, Eleanor Hayes
Nichols, Minnie Louise
Ordway, Annie Freeman
Packard, Ida Louise
Porter, Clara
Shiverick, Sarah

Spargo, Ida Thankfull
Whitney, Mary Jane
Worsley, Julia Bartlett

JUNIOR CLASS.

Boys.

Bradley, Charles Wesley
Cook, John Henry
Eddy, John Lodge
Elder, William
Fairbrother, Edwin Smith
Grundy, Thomas Benjamin
Hannum, William Ellery
Hubbard, Arthur Augustus
Knapp, Edward Lawrence
Lynes, William
Moseley, Frederick Clark
Murphy, John
Pratt, Charles Dudley
Putnam, Silas Safford
Sharp, Everett Howe
Sivret, Frank Tileston
Sweet, James
Todd, Frank
Walker, John Ballantyne
West, John Minot

Girls.

Anderson, Jane Allison
Austin, Catherine Downer
Bacon, Annie Jane
Barrows, Mila Isabel
Blake, Annie Frances
Buckpitt, Fannie Arabella
Callender, Adeline Jones
Coffin, Adeline
Cowling, Miriam Louise S.
Dix, Eva Clara
Fifield, Mary Sanborn
Elder, Mary Lambert
Foley, Mary Theresa
Glidden, Annette
Jacobs, Bertha Whitter
Johnson, Vesta Gertrude
Jones, Josie Alena
Knapp, Mary Augusta
Littlefield, Carrie Maria
Peckham, Lizzie Annie
Reid, Jane
Schallenback, Mary Frances
Smith, Emma Louise
Tavener, Grace
Tucker, Mary
Walker, Genie
Wall, Abba Elizabeth
Whall, Sarah Antoinette

CATALOGUE OF THE TEACHERS AND PUPILS OF THE BOSTON NORMAL SCHOOL, SEPTEMBER, 1872.

HEAD-MASTER.

LARKIN DUNTON.

HEAD-ASSISTANT.

JANE H. STICKNEY.

ASSISTANTS.

FLORENCE W. STETSON.

W. BERTHA HINTZ.

ANNIE J. STODDARD, Teacher of Primary School.

PUPILS.

Adams, Lavinia E.
Backup, Mary J.
Badlam, Anna B.
Bailey, Elizabeth G.
Bell, Helen M.
Blanchard, Fannie
Bickford, Eudora F.
Boston, Hattie E.
Brown, Ellen M.
Colligan, Lizzie A.
Crosby, Matilda F.
Davis, Frances M.
Davies, Ida H.
Dolan, Mary A. A.
Farrington, Mary A.
French, Mary F.
Gill, Frances W.
Gillespie, Annie M.
Gowing, Julia A.
Guild, Mary Ella
Haven, Carrie A.
Hayward, Laura K.
Hill, Henrietta A.
Hooker, Clara
Huckins, S. Lila
Jackson, Ella T.
Kelley, Frances T.
Kendall, Ida F.
Leary, Maggie J.
Lee, Isabel F.
Levi, Miriam
Livingstone, Isabel C.
Lewis, Mary L.
Macdonald, Anna
May, Alice M.
McGowan, Katie E.
Nason, Katie A.
Nash, Hannah A.
Ordway, Lizzie
O'Dowd, Honora T.
Park, Lizzie A.
Porter, Electa M.
Preble, Harriet I.
Proctor, Florence M.
Putnam, Helen A.
Sanborn, Lizzie A.
Sanford, S. Grinnell
Scanlan, Bridget E.
Smith, Florence
Snow, Clara J.
Stevens, Laura M.
Story, Anna L.
Thacher, Isabel
Turner, Ella A.
Withey, Emily W.

REPORTS

OF THE

SUPERINTENDENT OF PUBLIC SCHOOLS

FOR THE YEAR ENDING

AUGUST 31, 1872.

TWENTY-FOURTH

SEMI-ANNUAL REPORT.

To the School Committee of Boston: —

Gentlemen, — In conformity with the requirements of your regulations, I respectfully submit the following as my Thirty-sixth Report, the Twenty-fourth of the semi-annual series.

SCHOOL ATTENDANCE.

Two things are requisite to make the education of the people complete: good schools and good attendance. Good schools will not suffice without good attendance; nor will good attendance avail without good schools. To secure these two things is the problem of education.

It is not my purpose at this time to discuss the character or extent of the means of instruction afforded by our system of schools. When it is stated that adequate provision has been made for the instruction, absolutely gratuitous, of all children and youth, not only in Primary and Grammar Schools, but also of all who are qualified, in High Schools; that the day schools are supplemented by a system of evening schools, of different grades and descriptions, for the benefit of adults and of children whose circumstances require them to work during the day; that the school accommodations comprise 105 school-houses, most of which are substantial and commodious edifices, with all the modern improvements in school architecture, the aggregate actual value of this school property amounting to $5,891,747.15; that the whole number of sittings, each consisting of a separate desk and chair of the best patterns known, amounts to 44,192; that 1,000 teachers are employed at the annual expense for salaries of more than $800,000; and that the annual expenditure for school purposes, exclusive of the cost of school-houses and lots, exceeds $1,000,000, — when this is stated, it is evident that there has been no lack of means in this city for the establishment and support of public schools. Cheap schools are usually poor schools. The great cost of our schools is not proof positive that they are good, but the liberal scale on which they are conducted affords the best presumptive evidence in their favor, for an intelligent community would not be likely to pay so high a price for a poor article. If the inestimable blessings of a good education are not secured to every child in the community, it is certainly not for want of well equipped and liberally supported schools. If there are children growing up without proper instruction, the cause is to be found in the want either of ability or disposition on the part of their parents to send them to the schools which have been provided for their benefit.

What, then, are the facts in regard to the attendance and non-attendance of children in this city? This important question I propose to answer, as far as I am able to do so, by the use of the information at my command. In attempting to accomplish this purpose, the first item of information we have to seek is that of *the number of children of school age.* In a small country town it would not be a difficult task to get this statistical item with almost absolute exactness; but in a large city the exact enumeration of all the children of suitable age to attend school is a very different thing. The legal provision for the enumeration is as follows: —

"The assessors shall annually, in the month of May, ascertain the number of persons in their respective towns and cities on the first day of May, between the ages of five and fifteen years, and, on or before the first day of July following, report the same to the school committee." Our assessors, finding themselves unable, in a city of this size, to comply with the letter of the law by doing this work personally, placed the supervision of it in my hands. This duty I have performed as well as I could, during the past ten years. The mode of proceeding is this: An enumerator experienced in such matters is appointed to take charge of the work. He selects sixteen assistants, one for each ward, who present themselves at my office for examination as to their fitness for the duty to be performed by them. When the requisite number of assistants has been approved, they are furnished with blank books* and carefully instructed as to the manner in which they are to proceed.

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* Note. — The schedule printed at the head of the books used is as follows: —

Locality.	Order of the Families.	Children between the ages of 5 and 15.	Attend Public School.	Attend Private School.	Teachers of Private School.	Location of Private School.

At the end of the first day's work the enumerator presents the books of his assistants for examination. This is repeated several times during the progress of the work. If an assistant proves to be incompetent, he is discharged. As a means of securing fidelity and accuracy in the work, oc-

The following questions and explanations are printed on the first page of each book: —

DIRECTIONS TO CANVASSERS.

Questions to be asked by the Canvasser.

1st. Is there more than one family in this house?
2d. Is there any family in this house having one or more children?
3d. How many children have you that are over 5 years of age and under 15?
4th. How many of these attend public schools?
5th. How many of these attend private schools?
6th. If any attend a private school, what is the name of the school, and where is it located?

N. B. These questions should be put in a clear and distinct manner, so that they may be well understood and correctly answered.

A single parent and one child are sufficient to constitute a family, and should be so registered; but a single person living alone is not to be considered a family. A husband and wife are to be accounted a family, whether they have children or not.

A person keeping a hotel or boarding-house is to be considered a family. Children living away from their parents belong to the family with whom they live.

Ask of each family question 3*d.*

" *Under* 15 *years of age*" *means before the* 15*th birthday.*

" *Over* 5 *years of age*" *means after the* 5*th birthday.*

Each book contains also the map of the ward for which it is assigned.

casionally the name of one of the assistants is drawn by lot, and his book is put into the hands of a suitable person to re-canvass a portion of his ground. Sometimes the enumerator and myself together make this re-canvass. Even with all the care thus bestowed upon this matter, it is not to be supposed that mathematical accuracy has been reached. It is, however, safe to say that a tolerably close approximation to it has been attained.

The enumeration of last May made *the number of persons in the city between the ages of five and fifteen years*, 45,970. This is the number of children to be educated, or the number due at school, on the supposition that the schooling of all children is to be continued until the age of fifteen years.

We are now to ascertain how far this number can be accounted for. In attempting to do this we begin with the enumeration of the pupils in the public schools; and for this purpose I use the statistics made up at the close of the last school year, because they contain the last yearly averages. Our school records have not been so kept, until the beginning of the present school year, as to show how many *different pupils* are enrolled; they show only the *average number belonging*. The average for the year is found by averaging, in the first place, each month, the numbers actually on the roll for each day in the month being added, and the sum being divided by the number of school days in the month. Then the monthly averages thus obtained are again averaged. When a pupil is absent for five consecutive days, for any cause whatever, his name is dropped from the roll, until he returns, and it is not counted with the number belonging. If a pupil leaves without intending to return, his name is dropped at once. This mode of keeping the records makes the average belonging considerably less than it would be, if the names of pupils, absent from sickness or other causes, were retained and counted as being on the roll, until their return. Teachers generally try to keep their rolls *trimmed* as closely as possibly, because, in this way, the per cent. of attendance is made to appear more favorable. Besides, it is to be borne in mind that, by this mode of keeping the records, the number reported as the yearly average belonging, is much less than the whole number of pupils, who have been in attendance for some part of the year. For instance, if one pupil attended school *five* months, another *three*, and a third *two*, these three pupils would be counted as if they were only *one* child attending school the ten months which constitute the school year.

The average whole number *belonging* to the public schools for the year ending Aug. 31, 1871, was: —

Day Schools	36,174
Evening Schools	1,666
Evening Drawing Schools	380
Total	38,220

The average *attendance* at the private schools, for the year ending Aug. 31, 1871, was: —

Tuition Schools	2,945
Free Catholic Schools, and Charitable and Reformatory Institutions	4,359
Total	7,304

The average attendance at these two general classes of private schools would not probably exceed 85 per cent. of the whole number belonging. On this supposition, the average *whole number belonging* to the private schools would be 8,593. Adding this number to the average whole number belonging to the public schools, we have, as *the aggregate, average whole number of pupils belonging to public and private schools*, 46,813, a number larger by nearly one thousand than that of the children in the city of school age. But this number includes pupils over 15 years of age; there are none in school under 5 years of age. We must, therefore deduct from it those pupils who are over 15. In the High Schools the number of pupils over 15 is 1,082, and in the Grammar Schools, 1,110. As we have no returns of the ages of pupils in the evening and private schools, the number who are over 15 years of age can only be estimated. In the evening schools I estimate that two-thirds are over 15 years of age, amounting to 1,110. In the free private schools, little else than the elementary branches being taught, it is probable that there are very few pupils over 15 years of age. Among the tuition private schools were included the Industrial School of the Massachusetts Institute of Technology, and the commercial colleges, with 576 students belonging. It may reasonably be taken for granted that all these students are over 15 years of age. By far the larger number of the tuition private schools are for young children, and, at all events, the proportion of the pupils in these schools, taken together, who are over 15 years of age, is not greater than that of the public schools, which is about 6 per cent.; assuming this figure as the basis of calculation, the number over 15 in these schools is 465. Adding this number to 576 we have 1,041. A fraction of the pupils in the private schools are non-residents, but this is balanced, probably, by the private schools not reported by the canvasser. Several private schools are known to have been omitted in the enumeration.

The number over 15 years of age stands thus: —

In High Schools	1,082
In Grammar Schools	1,110
In Evening Schools	1,110
In Private Schools	1,041
Total,	4.343

Deducting the total number over 15 from the whole number belonging to all the schools, and we have the number under 15 belonging, thus: —

Number belonging to all the schools	46,813
Number over 15	4,343
Number under 15 belonging	42,470

This number, thus accounted for, taken from the whole number of children of school age, enumerated, 45,970, leaves 3,500 still to be accounted for. For this purpose it is necessary to examine our school statistics a little more closely.

CLASSIFICATION OF PUPILS IN PRIMARY SCHOOLS BY AGES.

Five years of age	17 per cent.
Six years of age	22 " "
Seven years of age	23 " "
Eight years of age	19 " "
Nine years of age and over	19 " "

It appears from the above that the number of children 5 years of age who belong to the Primary Schools is only 75 per cent. of those 7 years of age. It may be assumed, then, that at least 25 per cent. of the children 5 years of age do not attend either public or private schools. The whole number of children 5 years of age is about one tenth of the number between 5 and 15, or 4,597; 25 per cent. of this number is 1,149. I consider this number of children who are not in school, or nearly all of it, as satisfactorily accounted for. When I say it is satisfactorily accounted for, I mean that this number cannot with propriety be considered as any part of the number of children who are growing up without the advantages of schooling. For these children are, for the most part, kept at home by their parents, not to their injury, but for their good. They are not withheld from school to work at home, or to work for hire. A very small fraction may be prevented from attending school on account of the neglect of parents. It is becoming very common for parents in easy circumstances to defer sending their children to school until six or even seven years of age, and for a child under six years of age, the freedom of a good home is doubtless better than the teaching to be had in an ordinary school. The children of the poorer class of parents who arrive at the age of 5 years during the winter season, are generally kept at home until the opening of spring. This is not the consequence of neglect; it is done out of regard for the welfare of the children. Besides, it is to be borne in mind that children 5 years of age are not generally regarded as having arrived at school age. In several States of the Union children under six years of age are prohibited from attending school.

And then, on the other hand, it is not reasonable to take it for granted that all children from 12 to 15 years of age who are not in school are to be classed with those who are growing up without competent education. In this State there is no school age recognized and fixed by law. Is it not doubtful whether it would be best for all children to attend school constantly until the age of 15 years? I am not aware of the existence of any system of general education that contemplates the constant schooling of all children up to that age. The end of the thirteenth year is the age most generally designated as the minimum for constant and consecutive attendance at elementary schools. In Switzerland, a country unsurpassed for the excellence of its system of popular education, the constant schooling of children is not required after the end of their twelfth year. From this age they are required, during three or four years, to attend certain schools from two and a half to eight hours in each week.

The number of pupils between 10 and 14 years of age belonging to the Grammar Schools is 12,718. This would give, if there were no falling off in the attendance of older pupils, 3,179 as the number of pupils, who are 14 years age, belonging to those schools. But the number of this age actually belonging is only 1,760, showing a falling off of 1,419. This number of pupils, it is evident, must have attended school up to about the age of 14 years, and if so, they are pretty well accounted for. If they have not received so good an education as could be desired, they are by no means to be classed as *ignorants*. Then the number between 12 and 14 is 978 less than the number between 10 and 12. This number fall out of the school ranks after they reach the age of 12 years and before they reach the age of 14; and all or nearly all pupils who remain in school until 12, even if their attendance is not very regular, get a fair knowledge of reading, writing and spelling, with the elements of arithmetic and geography. It is reasonable to suppose that half the pupils at least, leaving school at 12 or 13 years of age, have a passable elementary education. On this supposition, we have 489 more to add to those previously accounted for.

The children between 5 and 15 not in school, thus accounted for, are: —

Those 5 years old kept at home	1,149
Those leaving school at 14 years of age	1,419
Half of those leaving school between 12 and 14 years of age	489
Total, ...	3,057

This leaves less than 500 of the 3,500 remaining to be accounted for, and yet I have made no estimate of the number under 15 who have left private schools after having obtained a tolerably good elementary education, nor have I undertaken to calculate how much the whole number belonging to our schools would have been swelled by disregarding the "five day rule," and counting as belonging all pupils who have been absent for a much longer period than five days.

RECAPITULATION.

Whole number of children between 5 and 15,		45,970
Number belonging to Public Schools,	38,220	
Number belonging to Private Schools,	8,593	
Total number belonging to all schools,		46,813
Number in all schools over 15,		4,343
Number between 5 and 15 in all schools,		42,470
Number 5 years old not in school,	1,149	
Number 14 years old not in school,	1,419	
Half the number between 12 and 14 not in schools,	489	
Number between 5 and 15 unaccounted for,	443	
		3,500
		45,970

It appears, then, that the whole number of pupils of all ages belonging to the public and private schools is considerably in excess of the number of persons in the city between 5 and 15 years of age; that the number between these ages belonging to the public and private schools is 92 per cent. of the whole number in the city; that of the 7 per cent. not attending school, six sevenths are pretty well accounted for, making 99 per cent. in school, or accounted for, while 1 per cent. remains unaccounted for. This statement of the case respecting the school attendance in this city seems to afford evidence for the belief that the number of children who are growing up without acquiring at least the rudiments of education is quite small. During the past ten years, I do not remember to have met with the case of a child who had resided in the city until the age of fourteen without learning to read and write.

Our truant officers are expected to look after all children not attending school, who are found in the streets without any lawful occupation. From their reports, and from information derived from other sources, I had good reason for believing that they are faithful and efficient in the performance of their duty. But as I occasionally hear it said in educational speeches, or read in some newspaper communication, that there are several thousand — from ten to fifteen thousand I think is the number named! — vagrant urchins in the streets growing up in ignorance, idleness, and vice, I thought I would try to find where they were. Accordingly, some week or two ago, on a bright and sunny morning, taking care not to select a holiday, I set out on a voyage of discovery. I went to all the railroad stations, I drove round the marginal streets, scanning the wharves and alley-ways, keeping a sharp lookout for boys and girls of school age. The result of this perambulatory expedition, which occupied two or three hours, was quite extraordinary, in respect to the smallness of the number of children of school age that were found at all. Every one found was stopped and his case inquired into. The whole number found was hardly more than could be counted on one's fingers, and among them there was only one who had not a good reason for being out of school. This was a truant who had slipped through the fingers of his teacher, and escaped the vigilance of the truant officer. The next day being fine, I continued the survey, going through nearly all the streets of a densely populated section of the city. The result was about the same as that of the preceding day. The few children found, with one exception, gave good reasons for their absence from school. He was a licensed newsboy, and was generally found in school. A similar district in another part of the city was inspected on the third day. It was the same thing over again. I propose to repeat this survey of the streets when the spring opens. In my last report I presented a tabulated report of the doings of the truant officers during the past ten years. That report affords strong evidence of the activity of those officers, and it is no doubt largely owing to their labors that so few absentees are found in our streets.

But however favorable our statistics of attendance may appear, it is nevertheless quite certain that there are many children in the city who are not in the way of acquiring what may be called a competent education, that is, a good elementary education; and so long as there is one such child remaining, our efforts to improve the attendance, and reduce absenteeism, should not be relaxed. Among the forces to be relied upon to secure the general attendance of children at school, the character of the schools is the most important. The more nearly our schools approach to the most approved standard of excellence, the more they will be attended, not only by the children of the wealthier classes, but also by the children of the poor. In pursuing the conquest of ignorance this fact should ever be kept in the foreground. Still, the attractive force of a good school is not alone sufficient. Experience proves that it must be supplemented by coercive instrumentalities. As I have already intimated, the truant law, which has been in operation for twenty years, has proved a powerful auxiliary in the warfare against ignorance. Indirectly the truant officers have performed a very valuable service, which, perhaps, was not anticipated when the truant law was enacted; they have, to a very great extent, been the means of making those classes of persons who do not appreciate the value of education, at least feel the disgrace of voluntary ignorance. Let the sentiment once become universal among all classes of society that voluntary illiteracy is not only disgraceful, but criminal, and there will be comparatively little need of the *application* of compulsory means to secure school attendance.

I am not yet prepared to take the ground that every child should be expected, much less compelled, to attend school constantly until the age of fifteen years, but I think we ought to spare no pains to secure to every child the advantages of schooling until the age of fourteen years. For the present this might be accepted as a reasonable minimum. The law requires children to be sent to school, by their parents or guardians, for at least twelve weeks in each year, until they are fourteen years of age, and it forbids the employment in manufactories of children under fifteen years of age, unless they have attended school at least three months during the year next preceding such employment. There is little occasion for enforcing these provisions of law in the case of children under twelve years of age. The practice of employing children from twelve to fourteen years of age in stores is becoming quite common, and it may be found necessary to require the parents of such children to keep them in school during the time prescribed by law. The truant officers are now engaged in the investigation of this matter. I have frequently requested them to ascertain whether in their respective districts children are employed, contrary to law, in manufacturing establishments. But they have entered no complaints against manufactories for such employment of children.

The evils of *Non-Attendance, Absenteeism, and Truancy* are largely occupying the attention of educators in all parts of our country. The following judicious and appropriate remarks on these evils are taken from the last report of the United States Commissioner of Education: —

"The non-attendance of the population of school age in our cities, increased by absentees and truants, is the grand source from which are supplied all the developments of vice and crime against person and property. These evils are noticed in some form of complaint in almost every State and city report; each is sufficient to imperil the interests of any community. . . .

"For these evils, already so vast, and still growing with such rapidity in most of our cities, many causes are assigned. The indifference or the poverty of parents, the inconvenience of location of school-houses, the unattractiveness of the school-houses, the insufficiency of school accommodations, and the inefficiency of school-teachers, are among those generally given. But the causes are sufficiently apparent, in any community, to those who will look after them carefully.

"How can they be overcome, and their consequences remedied? The public sentiment of each community must answer. Nothing adequate, however, may be expected, if the facts are not looked up by the teachers, the police, and other city authorities, and brought home to the feelings of the citizens. It is useless to say that these evils cannot be removed. If they are irremediable, we must admit the alarming fact that many of our cities are fast becoming unsafe as places of residence for honest and decent people. Life would lose its security and property its value. The conduct of school officers, and teachers sometimes, by their indifference, suggests that the remedy should begin with them. In these cases they conduct the schools as if they were intended only for their own convenience, and for the benefit of scholars that they may choose to retain within them. Too many reports never recognize this element, never include the whole population of school age. Average attendance and percentage of attendance are made out on the basis of enrolment; whereas the standard in every case, for the system or the school, should be the education of the whole number who ought to be in school. Every system and every school should compare what it does with what it ought to do for the whole number of children for which it is responsible.

"It is important to show the evils resulting from the running away, or absence, of those who are registered in the school; but the representation, if truthful and complete, would include the corresponding facts with regard to those who never appear in the school-room. Go up and down our cities, how few can even seat, and how many less can give instruction to the total number of children of school age? Not a single State can do this. It may be said then, first, that the idea must be corrected in the minds of school officers and teachers; second, there must be ample instruction and accommodations for the entire population of school age; third, every appropriate measure must be adopted to overcome the indifference of parents; and fourth, if the evil is not otherwise remedied, the law should imperatively require every child to receive instruction, at least in the rudiments of an English education, a certain number of months each year within the period of proper school age. These things not only ought to be, and are essential to the public good, but they have been done and well done. Boston long since showed, approximately, how education can be guaranteed to every child in an American city. Massachusetts furnishes a good law, and the respective municipalities put it into efficient operation. Municipal officers, teachers, police, heartily unite, and favorable results are reported. New York has a good law, but it is well-nigh without enforcement. Whatever operates against one of these evils has a favorable effect upon each of the others. The absolute prevention of non-attendance will gradually reduce absenteeism and truancy."

In commending what has been done in Massachusetts to secure school attendance, I understand the able Commissioner, General Eaton, to mean that we have done well in comparison with those communities which have done little or nothing in this direction; not that we have done all that is desirable.

As it is profitable to know and to consider well what competent judges think of us, and especially what competent judges from foreign countries think of us, I quote in this connection extracts from a letter concerning these matters in Massachusetts and Boston, written to our Educational Commissioner at Washington, by Mr. A. J. Mundella, of England, a prominent member of Parliament, and an able and well-informed advocate of popular education. His visit to our schools, and his admirable address to our Primary teachers, are doubtless fresh in the minds of members of the Board: —

"I may congratulate you without reserve on possessing, in all the States through which I have passed, the best and most commodious school-houses in the world. Nothing which I have seen in any European country will compare with them; the State of Massachusetts, I think, and more especially the city of Boston, standing pre-eminent. The Normal Schools which I have seen are excellent, and the attainments of the teachers, especially of the female teachers, beyond anything I could have expected, and far beyond anything I have witnessed elsewhere.

"The munificence of the American people in the section I have visited, in providing schools, is, in my opinion, entirely without a parallel; a good education being offered free to every American child. If I have any regret, it is to notice that where such ample, almost lavish, provision has been made, *there are still many who partake very sparingly only, while others absent themselves altogether from the feast.* If you could introduce a plan for enforcing regular attendance for a course of years, as is done in Germany, your educational system would leave little or nothing to be desired. I may state, from long experience, that where the education of children is wholly dependent upon the parents, selfishness, or the indifference, or intemperate habits of many, will cause a considerable number to be entirely neglected, or only partially educated; and, in a country like yours, where the only guaranty for your free institutions is the intelligent assent and support of the citizens, the State and the nation have a right to demand that those who share in the government of the country, and enjoy its privileges, shall have had the advantage of education and a virtuous training.

"In my opinion the successful working of the schools in Boston is mainly attributable to the fact that large, compulsory powers are exercised by the School Board of that city. . . .

"While there is so much room for congratulation, there is an immense field remaining unoccupied, which cannot be neglected without grievous loss to the nation. *I refer to technical, industrial, and art education, which, so far as national and State effort is concerned, seem to have been much neglected.* The Cooper Institute of New York, and the Institutes of Technology at Boston and Worcester, are bright exceptions. The first I regard as one of the most noble and useful instances of private benevolence I have ever encountered."

CLASSIFICATION.

In connection with the foregoing account of school attendance it seems desirable to show the classification of the pupils belonging to the public schools, for, as an element in determining the success of our school system, it is necessary to know, not only how many children are in school, but also to know to what grades and classes they belong. We want to know, in the first place, the percentage of pupils belonging to the three *grades of schools*, namely, — the High, the Grammar, and the Primary. And then we want to know the percentage of the pupils belonging to *the different classes of each grade.* For the purpose of this comparison the statistics are taken from the returns of January 31, 1872.

Taking the average whole number belonging to the day schools [36,560], during the half year preceding the above date, as the basis of calculation, we find that the percentage belonging to each grade is as follows: —

Schools.	*Number.*	*Per cent.*	
		1872.	1862.
High,	1,723	.04–7	.02–9
Grammar,	19,605	.53–6	.47–4
Primary,	15,232	.42–6	.49–6

This table shows a very considerable gain in the percentages of the upper grades. The Grammar Schools have made a great relative gain. The proportion of pupils in the High Schools has increased very largely, the number 47 as compared with the number 29 representing the ratio of increase. For every 1,000 pupils in all the day schools, there are 47 in the High Schools, or a little less than 5 per cent. But a little calculation will show that this is not the true per cent. of the pupils that enter the High Schools, as is sometimes erroneously asserted in attempting to prove the inefficiency of the lower schools. It is manifestly absurd to take the percentage of pupils in High Schools at any given time as the per cent. of pupils who avail themselves of High School education. And yet this absurdity is repeated at about every educational gathering in this region. To get the true per cent. the *time* in the High Schools as compared with the time in the lower schools should come into the calculation in connection with the numbers in these grades of schools. The number that entered the High Schools this year was 19 per cent. of the number that entered the Grammar Schools from the Primary.

Classification of High Schools.

Schools.	Advanced.	Classes.					
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Latin	......	23	27	33	25	11	99
English High	14	104	170	235	......	......	......
Girls' High and Normal	52	117	181	246	......	......	......
Roxbury High	16	41	65	78	......	......	......
Dorchester High	......	46	37	47	......	......	......
Totals	82	331	480	639	25	11	99
Percentages	.04–9	.19–8	.28–7	.38–3	.01–4	.00–6	.05–9

The percentages in the foregoing table show the ratios of the several classes to the whole number of pupils belonging to the High Schools, January 31, 1872. The advanced class of the Girls' High and Normal School includes the 36 pupils in the Training Department.

The following table shows the number of teachers, the average number of pupils, and the average number of pupils to a teacher, in each of the High Schools, during the half year, ending January 31, 1872: —

SCHOOLS.	No. of Teachers.	Average No. of Pupils.	Average No. of Pupils to a Teacher.
Latin	11	222	20.1
English High	17	541	31.8
Girls High and Normal	23	622	27.
Highlands High	6	206	34.3
Dorchester High	5	132	26.4
Totals	62	1723	27.7 [av.]

Classification of Grammar Schools.

Classes.	*Number, Jan.* 31, '72.	*Per cent.*
First Class (highest),	1448	.07
Second Class,	2349	.12
Third Class,	2996	.15
Fourth Class,	3273	.17
Fifth Class,	4491	.23
Sixth Class,	5075	.26

The classification shown in the above table, which has been taken from the last semi-annual returns of the Grammar Schools, is not strictly correct, as it is known that pupils of some schools were reported as belonging to higher classes than they were, by the standard of the programme, qualified for. It is hoped that in future the returns in respect to classification will be in strict accordance with the facts as they exist at the time of making the returns. In no case should pupils be designated as belonging to the fifth class, unless they have passed an examination in *all* the studies required in the sixth class. And so of the other classes. One of the principal objects for which the course is divided into steps is to facilitate the transfer of pupils from one school to another without loss of time. But if these steps are disregarded in the promotion and designation of pupils, confusion and waste of time is the result.

A pupil going from a school which is not correctly classified to one that is, cannot be placed in a class suited to his attainments. And the case is just as bad where the pupil goes from a school that is classified is accordance with the programme to one which is not so classified.

The following table shows the number of teachers and average whole number of pupils, and the average number of pupils to a teacher (not counting the masters' head assistants) in each Grammar School for the half year ending January 31, 1872.

SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams......	12	532	48.3	Hancock ...	19	873	48.5
Bigelow.....	20	887	46.6	Lawrence ..	18	858	50.4
Bowditch....	14	533	41.0	Lewis......	12	561	51.0
Bowdoin.....	12	494	44.9	Lincoln	15	774	55.3
Boylston....	11	400	40.0	Lyman	12	498	45.2
Brimmer....	16	638	42.5	Mayhew....	13	468	39.0
Chapman....	12	568	51.6	Norcross....	15	687	49.0
Comins......	17	808	50.5	Phillips	13	551	45.9
Dearborn....	16	714	47.6	Prescott....	13	609	50.7
Dorch'r Dist.	33	1075	35.8	Quincy.....	14	609	46.8
Dudley......	7	258	43.0	Rice	15	618	44.1
Dwight......	13	599	49.9	Shurtleff....	14	664	51.0
Eliot........	16	742	49.4	Washington	7	243	40.5
Everett......	15	684	48.8	Wells......	11	451	45.1
Franklin....	15	652	46.5	Winthrop...	18	757	44.5
Sherwin.....	18	800	47.0	Totals.......	456	19.605	46.3

The following table shows the increase and decrease in the number of pupils in the respective Grammar Schools during the past year: —

Schools.	Feb. 28, 1871.	Jan. 31, 1872.	Decrease.	Increase.
Adams	537	532	5	....
Bigelow	856	887	....	31
Bowditch	587	533	54	....
Bowdoin	513	494	19	....
Boylston	418	400	18	....
Brimmer	661	638	23	....
Chapman	546	568	....	22
Comins	833	808	25	....
Dearborn	717	714	3	....
Dorch'r Dis't	1001	1075	....	74
Dudley	359	258	101	....
Dwight	618	599	19	....
Eliot	754	742	12	....
Everett	711	684	27	....
Franklin	664	652	12	....
Sherwin	675	800	....	125
Hancock	886	873	13	....
Lawrence	850	858	....	8
Lewis	487	561	....	74
Lincoln	761	774	....	13
Lyman	508	498	10	....
Mayhew	519	468	51	....
Norcross	679	687	....	8
Phillips	581	551	30	....
Prescott	581	609	....	28
Quincy	660	609	51	....
Rice	634	618	16	....
Shurtleff	582	664	....	82
Washington	386	243	143	....
Wells	473	451	22	....
Winthrop	796	757	39	....
Totals	19,833	19,605	693	465

It appears that the net decrease in all the Grammar Schools is 228. I am unable to account for this decrease. In the particular cases of the Washington and Dudley Schools, the decrease is accounted for by change of district limits, whereby pupils were transferred to other schools. The fact that the number of children between five and fifteen years of age, enumerated last May, showed a decrease, affords room for concluding that the population of the city has decreased, in consequence of the recent rush to the suburban towns.

Classification of Primary Schools.

Classes.	*Number, Jan. 31, '72.*	*Per cent.* 1872.	1863.
First Class (highest),	2466	.16	.15
Second Class,	2723	.18	.14
Third Class,	2301	.15	.14
Fourth Class,	2363	.16	.15
Fifth Class,	2361	.15	.17
Sixth Class	3125	.20	.25

Here it will be observed that there is a remarkable evenness in the classes; and here the report is belived to be substantially in accordance with the facts. It will be seen also that the relative gain in the upper classes during the past years has been very gratifying. In 1863 the first class was only three-fifths of the sixth class; now it is *four-fifths.* It used to be said that in the graded system of Primary Schools, the sixth class must always be quite disproportionate in numbers to the other classes. Experience has disproved this assertion. The aggregate percentages of the three upper classes is almost exactly the same as that of the three lower classes. This is a most satisfactory showing.

The following table shows the number of Primary pupils in each district, and the *average number of pupils to a school, or teacher, during the last half year:* —

Districts.	No. of Schools.	Whole Number.	No. to a School.	Districts.	No. of Schools.	Whole Number.	No. to a School.
Adams	9	415	46.1	Lewis......	10	490	49.0
Bigelow	14	642	45.8	Lincoln	11	588	51.6
Bowditch ...	10	395	39.5	Lyman.....	7	306	43.6
Bowdoin....	11	476	43.2	Mayhew ...	7	289	41.2
Boylston....	6	308	51.3	Norcross ...	14	610	43.5
Brimmer....	12	451	37.6	Phillips	7	269	38.4
Chapman ...	10	438	43.8	Prescott....	9	436	48.4
Comins	17	831	48.8	Quincy.....	11	441	40.1
Dearborn ...	17	825	48.5	Rice	10	356	35.6
Dorchester..	20	888	44.4	Sherwin ...	12	572	47.6
Dwight	6	263	43.8	Shurtleff...	12	629	52.4
Eliot	16	749	46.8	Washington	7	305	43.6
Everett.....	10	533	53.3	Wells......	12	514	42.8
Franklin....	6	330	55.0	Winthrop ..	9	365	40.6
Hancock....	19	880	46.3	Training ...	1	38	38.0
Lawrence...	12	574	47.8	Totals	334	15,232	45.6

The following table shows the number of Primary pupils in each district promoted to the Grammar Schools, January 31, 1872, and the average number of promotions to each school in the respective districts:—

DISTRICTS.	No. of Schools.	Sent to Gr. Sch.	No. to a School.
Adams	9	47	5.2
Bigelow	14	111	7.9
Bowditch ...	10	65	6.5
Bowdoin	11	66	6.0
Boylston	6	45	7.5
Brimmer ...	12	64	5.3
Chapman ...	10	57	5.7
Comins	*17	99	6.1
Dearborn ...	17	123	7.2
Dorchester ..	20	101	5.1
Dwight	6	38	6.3
Eliot	16	112	7.0
Everett	10	73	7.3
Franklin ...	6	45	7.5
Hancock	19	105	5.5
Lawrence ...	12	94	7.8
Lewis	10	75	7.5
Lincoln	11	81	7.3
Lyman	7	30	4.3
Mayhew ...	7	51	7.3
Norcross ...	14	95	6.7
Phillips	7	26	3.7
Prescott	9	61	6.7
Quincy	11	42	3.8
Rice	10	50	5.0
Sherwin	12	63	5.2
Shurtleff	12	63	5.2
Washington	7	50	7.1
Wells	12	81	6.7
Winthrop ...	9	70	7.7
Training ...	1	....	....
Totals	334	2083	6.2

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* One school discontinued.

TEACHERS.

"All roads lead to Rome;" so all lines of educational improvement converge into one central object, — *the teacher*. The importance of other elements that go to make up a good school may be, and often are, overestimated. Not so with the teacher. The teacher *is* the school. How to secure to every school a teacher who understands and loves his work, — this is the supreme educational problem, at all times and in every place. It is a comparatively easy matter to build good school-houses, and make a judicious choice of text-books, and draw up a rational and sound scheme of instruction; but to furnish such teachers as are needed is a very different thing.

At the present day no one, whose educational opinion is of much account, doubts that special preparation is requisite for success in teaching. It is not enough that the person who undertakes to exercise the functions of teacher has enjoyed good advantages for general culture. To a thorough general education in literature and science, he ought to add a knowledge of the principles and methods of instruction and discipline. Thirty years ago or more, Horace Mann delivered in every county in the State an eloquent address on the proposition, "Special preparation is a pre-requisite to teaching." He set in a clear light the frightful waste of time and money in our schools for want of such preparation. But he found everywhere opponents who told him that the teacher was born, not made; that skill in teaching was a gift that came by nature; that it was an art which was incapable of being imparted by any process of training. But, happily for us, a great change has taken place in this respect. There is now a tolerably general agreement among us about the necessity of special professional training as a means of fitting teachers for their important and difficult duties. Nor is there any great difference of opinion in regard to the expediency and economy of providing for this needed training, through the instrumentality of special schools which are exclusively devoted to this single object. We call these institutions Normal Schools, the name *normal* being derived from a Latin word, which signifies a rule, standard, law. Schools of this character were called Normal Schools, either because they were designed to serve in themselves as the model or rule by which other schools should be organized and instructed, or because their object was to teach the rules and methods of instructing and governing a school.

Twenty years ago, after a thorough and exhaustive discussion of the subject, the School Board of this city established a Normal School, for the professional training of female teachers. This institution was not merely a Normal School in *name;* it was a Normal School in reality. And it did not aim or pretend to be anything else than a Normal School. Its sole aim was "to fit its pupils in training for the practical duties of teachers, by making them familiar with the most approved methods of teaching, and by giving them such command of the knowledge they have acquired, and such facility in imparting it, as shall enable them to originate methods of their own, and to apply them successfully in the instruction of those who may afterwards come under their care." It commenced its career with the most flattering prospects of success, but before it had been in operation quite three years, the public sentiment demanded provision for the higher education of girls who were not intending to become teachers. The School Board undertook to meet this demand by changing the character of the Normal School, so as to make it a High School for girls as well. "It will not, however," said the advocates of the measure, "entirely lose its character as a Normal School." True enough, it never has entirely lost its normal characteristics. But from that day it has been more of a High School than a Normal School. It has undoubtedly rendered great service to the city. It has always been a school of many excellences; many of our most successful teachers have been indebted to it for the best part of their education, and the establishment of the Training Department, eight years ago, deserves especial mention as a step in the right direction, from which our schools have derived considerable benefit. Still, I believe that far better results would have been attained by two separate organizations. Everywhere, as education advances, educational institutions are simplified. *Institutions become more efficient in proportion as their functions are limited and distinctly defined.* The academy which enjoys the highest reputation in New England, and perhaps in the country, for fitting young men for college, limits itself to that single object. I have always regarded our plan for accomplishing the objects of two different schools under one organization as a temporary expedient, and its abandonment as merely a question of time. It has been too long delayed. But the degree of unanimity with which the Board has just now, after long deliberation, voted to have a separate High School for girls, and a separate Normal School for the training of female teachers, leaves no room to doubt that this vexed question is at length settled.

This important action of the Board will leave the High School in its grand edifice, free to expand itself untrammelled, and to adapt its curriculum to the growing demand of the community for the largest and most liberal provision for the higher education of such young ladies as possess the disposition and capacity to avail themselves of it. The Normal School, on the other hand, not concerning itself with the business of imparting to its pupils a general education in literature and science, but limiting itself to the specific object of training its pupils in the science and art of education, of forming teachers of pupils who are already well-educated women, will be enabled to supply our schools with teachers of the highest qualification. If these institutions are conducted on right principles there will be no rivalry and no antagonism between them, any more than there is between the Latin and English High Schools. They will harmoniously co-operate with each other for the promotion of the educational interests of the city.

The Normal School should have, as an indispensable part of its organization, a model and practising school connected with it, embracing all the classes of the Primary and Grammar School grades. None but promising candidates, of mature age and good education, should be admitted to its course of training. The certificate of qualification should be awarded only to such pupils as prove, by actual practice, their aptness to teach. And then such as successfully pass the prescribed ordeal should have the preference over other candidates in filling the vacancies that occur in the schools. A Normal School conducted in accordance with these principles, cannot fail to improve the quality of teaching in all our Primary and Grammar Schools.

But such an institution is not the only means necessary for securing the requisite teaching ability. *We need better regulations in respect to the examination of teachers.* In this respect, instead of making progress, we have lost ground. Ten or twelve years ago candidates were seldom elected without having passed an examination. It is true, the examinations were not very systematic or thorough, and there was no uniform standard of attainments required. Latterly, teachers have, in most cases, been appointed without any examination. I am fully persuaded that the best interests of our schools demand a reform in this respect. I sometimes hear it said that an examination is of no account. It is not difficult, indeed, to imagine a sort of an examination which would be of little value, as a test of a teacher's qualifications. But an examination of the right description, — a fair, broad, thorough examination, covering professional topics as well as subjects of general education, — would be of great use in various ways.

Why should we not grant certificates of qualification of different grades? Why should teachers receive the maximum salary before they have obtained a first-class certificate? I am satisfied that there is great room for improvement in respect to the examination of teachers. I am satisfied that the present practice of ignoring the examination of candidates is not giving us the best teachers we might get for the salaries paid. What is needed especially is a fair chance for competition. And how can there be a fair chance for competition so long as there are no examinations open to all comers? Our practice is evidently not calculated to encourage the application of the most meritorious candidates. Instead of opening the lists for competition in scholarship and knowledge of teaching, we virtually subject our candidates to *a pedestrian competition*, in canvassing the members of a large board, and a large number of masters.

We want teachers who combine tact and technical skill with good scholarship. The choice should not be between tact without scholarship, and scholarship without tact. We should, in the first place, exclude all candidates who have not good scholarship, and, I should say, very good scholarship, no matter how much tact they may have, and then from the *good scholars* select those who show the most tact. Teachers who are not good scholars do not wear well. They are not likely to improve. They become more and more mechanical in their teaching. They inevitably become, if they remain long in service, incorrigible routinists. Their minds are wholly occupied with particulars and details, without being capable of dealing with principles. They are not likely to add much to the dignity or influence of the profession. It is especially desirable to have men of good education to fill the office of master; and as nearly all masters must come from the ranks of sub-masters and ushers, it is of the greatest importance to see to it that no man is appointed sub-master or usher who is not a very good scholar. The future of our schools depends largely on the character of the present sub-masters and ushers.

ADMISSION TO THE HIGH SCHOOLS.

On my recommendation, an order was introduced into the Board last year, with a view to a modification of the requirements for admission to the High Schools, excepting the Latin School. The proposition was to make the requirements of the highest class in the Grammar Schools the basis of the examination for promotion to the High Schools, and thus to harmonize these two grades of schools. This plan, however, was not adopted. As the regulations relating to this matter now stand, pupils can get into the High Schools who are not qualified to receive the graduating diploma of the Grammar Schools. This incongruity is not practically at this time a matter of vital importance. It is, however, quite important that the standard of requirements for admission to the High Schools should not fluctuate from year to year. The standard is composed of several elements, — the character of the questions, the number of the questions, the time given for answering them, the mode of marking the results, and the percentage of correct answers required. In all these elements there should be a reasonable degree of uniformity from year to year, unless notice is given beforehand that a change is to be made in any of them. It is a very easy matter to make the percentages go up or down, by varying the mode of marking the results of the same answers to the same questions. Last year, at the English High School, the answers to the questions in Interest were marked wrong, if they were not in conformity with the results of a method of solution somewhat recently adopted by bankers and brokers, and which the Grammar Schools had not intended to teach, but which they might have taught in a short time, if it had been known that it would be required. I do not know that any pupil was excluded in consequence of this marking, but the percentage thus obtained, if sent out without due explanation, would do injustice to the Grammar Schools.

As it is probable that there are many members of the Board who have not been furnished with the questions used at the examination for admission to the High Schools last July, I insert them here, for future reference, and accompany them with a copy of the questions used last year, for the same purpose, at St. Louis: —

FOR APPLICANTS TO THE HIGH SCHOOLS, BOSTON, JULY, 1871.

Geography.

1. Two ships start from the same port and sail, one ten degrees in latitude and the other ten degrees in longitude; which sails the greater distance?

2. Define Equator and Tropics.

3. The difference in longitude between London and New Orleans is 90 degrees; what is the difference in time?

4. What is the breadth, in degrees, of the Temperate Zone?

5. In what latitude and longitude are our antipodes?

6. What seas are found south of Europe?

7. Give three of the principal mountain chains in Europe.

8. Mention the three principal cities in the valley of the Po.

9. On what rivers are Hamburg and Bremen situated?

10. What change has taken place in the political geography of Europe during the past year, in consequence of the German French War?

11. Draw a rough outline map of New York, and mark the principal waters.

12. Mention the principal West India islands.

13. What are the exports of these islands?

14. If you were to visit Rochester and Syracuse, N. Y., and Pittsburg, Pa., what important productions and manufactures would you find at each of these places?

15. Mention the great physical divisions of North America.

16. Mention the capitals of the Middle States. Mention the most important cities on the Rhine. What animals are found in the Old World which are not found in the New?

17. Mention two great deserts of the world, and state where they are situated.

18. Mention three of the highest mountain-peaks in the world, and state where they are found.

19. What do you understand by the term water-shed in Geography?

20. What by a basin?

21. What is a relief map?

History.

1. When and by whom was America discovered?

2. When and by whom was Plymouth settled?

3. In what colonies was free toleration of religion recognized?

4. When and for what purpose was the confederacy of the "United Colonies of New England" formed?

5. What was the Boston Port-Bill?

6. In what year did the Revolutionary war begin? End?

7. Mention one of the acts of the first Continental Congress.

8. What event determined the French to become our allies?

9. Why were the "Articles of Confederation" superseded by the Federal Constitution?

10. What were the two national purchases of Jefferson's and Monroe's administrations?

11. What is meant by Protective Tariff?

12. During whose administration was there a surplus revenue in the treasury, and what was done with it?

13. What was the cause of the Mexican War?

14. Name two of our prominent generals in the Mexican War, and one important victory gained by each?

15. What was the cause of the Kansas troubles?

16. In what year did the Rebellion begin and end?

17. Name the State that first seceded from the Union.

18. Name two of the most distinguished loyal naval commanders during the Rebellion, and one of the most brilliant exploits of each.

19. What terms were granted the rebels on their final surrender?

20. What presidents of the United States have died during their term of office?

Arithmetic.

1. Divide 312 by $\frac{1}{3}$.
   Multiply 472 by $\frac{2}{3}$.
2. Divide $\frac{2}{7}$ by 250.
   Substract $\frac{5}{11}$ from 325.
3. 324 is $\frac{2}{3}$ of what number?
   What is $\frac{1}{3}$ of $8\frac{4}{9}$?

4. Reduce $\frac{4\frac{7}{8}}{6\frac{3}{5}}$ to a simple fraction.

5. Add $113\frac{2}{3}$, 118, $19\frac{1}{4}$, and $117\frac{5}{6}$.

6. Multiply forty and six hundred twenty-five thousandths by one hundred twenty-five thousandths.

7. Divide six hundred and twenty-five thousandths by two and five tenths.

8. Reduce 5 furlongs 21 rods to the decimal of a mile.

9. Reduce £7,325 to shillings, pence, and farthings.

10. If it costs $\$11\frac{1}{2}$ to carry 6 tons, 17 cwt., 20 lbs., $12\frac{1}{2}$ miles, how far can the same be carried for $23?

11. How many cords in a pile of wood 100 feet long, 8 feet wide, and six feet high?

12. How much will it cost to carpet a floor 30 feet long and 27 feet wide, at $3.75 per square yard?

13. Three men can do a piece of work in 24 days, how many men must be added to the number to do the same in 4 days?

14. I sold a horse for $2,100, and gained 5 per cent. on the cost; had I sold him for $1,800 should I have gained or lost, and how much per cent.?

15. What is the interest of $735 from April 7, 1870, to July 13, 1871, at six per cent.?

16. What is the interest on $9,675 from January 1, to March 3, 1871, at $7\frac{3}{10}$ per cent.?

17. What is the interest on a six per cent. U. S. Currency Bond of $10,000 from January 1, 1871, to March 17, 1871?

18. What is the bank discount on a three month's note for $5,000 at 9 per cent.?

19. Find the interest due on the following note, if paid March 19, 1871: —

Boston, July 1, 1869.

$2,500. For value received, I promise to pay John Jones, or order, twenty five hundred dollars on demand, and interest at six per cent.

Note. — Calculate the interest by days, 365 days to the year.

20. What will be your per cent. of correct answers, if you get seventeen out of the twenty right?

Grammar.

The figures written as exponents indicate the worth of the questions.

1^4. What is the difference between an adjective and an adverb?

2^4. Correct the sentences: If I had known it before I would have done different. Large bodies move slow.

3^4. Compare the adverbs *soon*, *well*, *much*, *wisely*.

4^4. State the different properties of a noun.

5^4. Write the plurals of the following words: *folly*, *chimney*, *deer*, *sheaf*.

6^4. How is a passive verb formed?

7^4. Express the idea of the following sentence, with the verb in the passive voice: Columbus discovered a light at a distance.

8^4. Define an auxiliary verb.

9^4. Write four auxiliary verbs.

10^8. Correct the following sentences: Each of the young ladies' are good scholars; but neither have learned their lessons. Between you and I, I think tis him.

11^4. What are the essential parts of a sentence?

12^4. Write a sentence wherein a participle is used as a noun.

13^4. Write a sentence in which the word *that* is used both as an adjective and as a conjunction.

14^4. Name the different parts of speech used as connectives.

15^4. Write the 1st person plural of the verb *call*, in the emphatic, progressive, and passive forms of the past indicative.

16^4. What are the principal parts of a verb?

17^4. Write the principal parts of *spin*, *throw*, *cast*, *cling*.

18^4. Define parsing and analysis.

19^{12}. Analyze the following: "Beautiful descriptions of morning *abound* in all languages, *but* they are *strongest*, perhaps, in the *East*, where the sun is frequently the object of worship."

20^{12}. Parse the words in italics in No. 19.

For Applicants to the High School, St. Louis, in June, 1871.

Geography.

1. What is a meridian?

Where must a place be situated to have no latitude and no longitude?

2. What is climate and upon what does it depend?

3. Define in order the following terms:

Lake;
Ocean;
Watershed;
Isthmus;
Peninsular.

4. A vessel is at London. Name in their order, one under the other, the bodies of water on which she must sail in order to reach Cairo, in Egypt.

5. Give the names of four rivers, whose course is northerly, and opposite each write the name of the grand division in which it is found.

6. Give the boundaries of Maryland, commencing with the northern boundary.

7. Give the situation of the following cities, naming the State, the part of the State, on what water: —

Chicago;
Cincinnati;
New Orleans;
Philadelphia;
Boston.

8. Where are the East Indies?

For what natural productions are they noted?
Where are the West Indies?
For what natural productions are they noted?
Name the largest island of each group.

9. In what division of South America are earthquakes most frequent?

10. Sketch an outline of Missouri, tracing the course of the Missouri river and locating St. Louis and Jefferson City, St. Joseph and Hannibal.

History.

1. By whom was the Mississippi discovered? Where? When?

2. Give the date and place of the earliest settlements in the United States.

   (*a*) By the English.
   (*b*) By the Spanish.
   (*c*) By the Dutch.

3. What was the chief cause of the war in America between the French and English?

   What part did the Indians take?
   Name the most important generals on both sides.

4. What provisions were made for education in the early history of Massachusetts?

5. What was the "Bill of Rights"? By whom passed? Give its date.

6. How long did the Revolution continue? Name the first and last battles. Give the names of the commanders in the last.

7. State the important differences between the Articles of Confederation and the Constitution of the United States.

8. What body of men formed the United States Constitution?

   When was it adopted?
   What officers constitute the Cabinet of the President?

9. When are parties entitled to trial by jury? What rights has the accused in respect to witnesses? To counsel? To jurymen? What is said of excessive bail?

Arithmetic.

1. Subtract four hundred and twenty-nine thousand and six hundred and eighty-nine, from one million two hundred and thirty-four thousand five hundred and twenty-three, and multiply the remainder by four hundredths.

2. Divide 16.23551 by 7.31.

   Define *factor; multiple;* give examples of each.

3. Find the greatest common divisor of 18 and 662.

   Find the least common multiple of 16, 18, and 171.

4. How would you proceed to find $\frac{15}{17}$ of any number?

5. Four sevenths of 84 is six elevenths of how many times 9?

6. How many square feet of paper will it take to cover the walls of a room 10 feet long, 6 feet wide, and 12 feet high?

7. A grocer sold three barrels of flour, one for $\$9\frac{1}{7}$ and each of the others for $\$8\frac{1}{15}$. If $27 were handed him, what ought he to return?

8. Divide $\frac{3}{4}$ of $2\frac{2}{5}$ by $\frac{4}{5\frac{1}{3}}$

9. What is the interest of $856.24 for 2 years, 5 months, and 7 days, at 6 per cent.?

10. If 9 men can reap 12 acres of rye in 12 days, how many men would be required to reap 8 acres in 6 days?

Perform this questian by analysis.

Grammar.

1. Write the plural of *echo*, *knife*, *penny*, and the letters *a* and *h*.

2. What is the rule for forming the plural of nouns? For forming the possessive?

3. Write the personal nouns.

4. How many degrees of comparison have adjectives, and what is the use of each?

5. Write a sentence in which the infinitive is used as subject; one in which an infinitive is the object of a transitive verb.

6. How is the passive voice of verbs formed, and what kind of verbs may have the passive voice?

7. Parse "what" in the sentence "I told him what to do."

8. Give an example of an interrogative sentence and underscore the subject of it.

9. Analyze "The girls were sliding swiftly on the ice."

10. Write a synopsis of "know" in the first person singular of the indicative mood.

Words to Spell.

Always, bulrush, conqueror, descendant, easel, furnace, ghastly, harass, incessant, javelin, kangaroo, lose, mignonette, necromancy, horizon, parallelogram, quadrillion, representative, stratagem, tranquillity.

THE FIRST STEPS IN TEACHING NUMBERS.

Being highly pleased with the handling of numbers in the lowest classes of the Primary Schools in the Adams District, I requested two of the teachers to write out in detail their mode of proceeding. My request was very kindly complied with. The papers sent me are so good that I insert them here for the benefit of other teachers. It must not be inferred from my commendation of what these two teachers did, under the advice and direction of their principal, that there are not many other teachers who are doing excellent work in teaching the first steps in numbers.

MISS A. E. REED'S PAPER.

The First Principles of Number, as Developed with the Sixth Class.

In beginning my first lessons in number, I bring before the class a book, a pencil, or a bell, and ask different children the names of the objects before them; they give me the names of them, and then they are asked *how many* books, how many pencils, etc.; they reply one. I ask them to repeat after me, one *book*, one *pencil*, one *bell*, and then different children volunteer to find me any one object that they may see in the room, always being required to connect the *name* of the object with the number found.

After a little drill upon one, I place one more beside the objects first taken; if I have taken books, I place one book by the first, requiring the children to watch me closely. I put one pencil by the first, and then taking both away, ask any child to do as I have done. How many books did I put with the first book? How many pencils with the first pencil? How many have I now? If they cannot all tell me, I say, *two* books, *two* pencils, and then desire them to count alone; one pencil, two pencils; one book, two books, and then the children are sent to find and count any two objects in the room.

Three and four, and the numbers as far as ten, are taken much the same way, every new number being preceded by drill upon the numbers already given.

After they can recognize two and three readily, and have some idea of the increase of number by *one*, the numeral frame is taken, and a child is asked to move four balls to one side of the frame; he is then asked to take one ball from the four balls, and the class tell how many balls are left; then one is taken from the three balls, and the children tell what remain, and finally the class see that nothing is left, by taking one from each number of balls.

After considerable practice upon the first ten numbers and their increase and decrease by *one*, the addition of numbers with objects (the sum not to exceed ten) is begun. I first take bright-colored blocks, as they are easily seen and handled; I place one upon my desk, and ask the class how many blocks they see (one); at a little distance from it I place another, and they say it is one block; then we count the number of blocks upon the desk and find there are two; pointing to the first block, I say, one block (class repeats) and one block are two blocks; then the blocks are removed, and some child is asked to repeat it, selecting and placing as done at first.

After some little practice with the teacher at the desk, the children are sent to the boxes at the back of the room, which contain bright-colored cards. The number of cards first sent for is very small, as two cards and one card; three cards and two cards; these are arranged at each side of the desk, and when all the children are ready, the bell is struck, and each child stands in turn, and gives the number of cards at each side of the desk; and then their sum, as four cards and three cards are seven cards.

Another part of the programme is, counting by objects to one hundred. Nail-prints, spools, blocks, or cards are used by teacher and children in learning the succession of numbers; and when that is well learned, questions are asked the class upon, —

First. The Relative Size of Numbers; as, Which would you rather have, sixteen tops or twelve tops? nine apples or eleven apples? and,

Second. The Order of Numbers, the children being asked to tell what comes next after any number that is given them; what comes next after nineteen? thirty-seven? twenty-three? etc., and when the last step is well understood, the class will readily add *one* to any number below twenty without the use of objects, as thirteen cards and one card are fourteen cards; sixteen cards and one card are seventeen cards.

These are the different steps that I have followed in number, this term, and comprise all the limits in the Sixth Class.

MISS ELIZA A. WIGGINS'S PAPER.

The Development of Number in the Fifth Class.

The starting-point in Mathematics is the development of Number. A right beginning justifies, almost secures, a right ending. A slow and sure progress will be made by the constant use of objects brought before the child's eye,—handled and counted by himself. This method (through the enthusiasm of the child) may startle the stiff disciplinarian, but most valuable and accurate practical knowledge will be gained.

Every member of the class requires to be furnished with a very economical apparatus, which will serve for all succeeding classes. This apparatus consists of paper boxes,—5¼ inches long, 3¼ inches broad,—(the covers fitting loosely), within each of which are kept 25 inch cards of various pleasing colors. On the under part of the box is written the child's name, also the year, month, and day it was loaned to him.

Twice a week, we have a very simple process of counting the cards, to see that each child has his complement,—never allowing any one to carry a card home, to feast the eyes of juvenile members. These boxes are kept in the desk, at the right-hand corner, and are never to be touched, except by order. When the time appointed for their usage arrives, at a given signal, the hands touch the boxes,—carry to laps,—place upon the desks, at the left-hand upper corner, having the length of the boxes parallel with the length of the desks, and at the very edge,—hands on covers,—covers on desks directly below the boxes,—hands in position.

The first idea to be developed is that of One or Unity. Teacher presents one book, one pencil, one boy, and children can very readily assign to it the name of One. Children are requested to look about the room and mention one thing they see, also one thing they have seen at home, on the street, or elsewhere. Children are told to take one card from the open box, and place it on the desk, at the right of the box, and touching the upper part of the box. After having advanced thus far, teacher places the figure 1 on the board, explaining its significance. Teacher makes one vertical line (|) on the board, children tell how many lines are made, copy the same on the slate; teacher makes the figure 1 on the board, children tell what it is, and copy the same on the slate.

At the next lesson, we have a Review of One, and Two is brought forward in the same manner. Two objects are shown to the children,—two desks, two slates, two girls. Children tell how many are presented. Children are told to place two cards on the desk at the right of the box and on a level. Teacher makes two (||) vertical marks upon the board; children tell how many, and make the same upon the slate. The figure 1 is made upon the board by the teacher, and its significance given; children make 1 upon the slate. The figure 2 is made upon the board by the teacher, and its significance given; children make 2 upon the slate.

In a similar manner, 3, 4, 5, 6, 7, 8, 9 and 10, are developed, by actual objects and by count. Then we take the combinations of numbers, — each decade by itself, — to 100.

At first the children are taught that 9 cards are more than 5 cards. The truth is evident to them as the cards lie upon the desk. In process of time they realize without sight that 3 oranges are less than 6 oranges, and finally they possess a knowledge of abstract numbers. They know that 9 is more than 7, 8 less than 10. To test their knowledge, teacher asks what number is counted before a certain number, what number after it; which is the larger number, which the smaller.

Children frequently count to 100, by the use of objects. The order of numbers can be easily taught at about this time; first, second, third, etc. Teacher tells a child to touch the tenth scholar, fifteenth desk, etc.

ADDITION.

With a sure foothold upon the value of numbers, we commence to count two numbers together, or to add. The signs of addition and equality are explained. The sign of addition, + (and), placed between two numbers, tells us they are to be counted together, or added. The sign of equality, = (are), tells us that the numbers on the left of the sign counted together, or added, are equal to the number on the right. Children comprehend, if they cannot explain, the meaning of the signs.

One child is requested to stand in front of the class, also another, and the children tell readily how many are standing. Children place one card upon the desk at the right of the box, and touching the box, also one card immediately below the first card, and they can tell at once how many cards are upon the desk. They read, looking at the cards: —

1 card + 1 card = 2 cards.

Teacher makes one vertical mark (|) upon the board, also its equivalent in the figure 1. Children tell what they are, and copy on their slates. Teacher makes one vertical mark (|) immediately below it, also its equivalent in the figure 1. Children copy the same upon the slates. The work on the slate would be as follows: —

| = 1
| = 1
1 + 1 = 2

Children would read looking at the slate, thus:—

1 + 1 = 2

We proceed to add 2, 3, 4, 5, 6, 7, 8 and 9 to 1 in the same way, and gradually to add to 2, 3, 4, 5, 6, 7, 8 and 9, till the sum equals 10.

In connection with this work, teacher prepares plain white cards with the various combinations that amount to 10, using the signs + and = (8 + 2 =), but not marking the answer, which the children (each having a different combination) are required to read aloud, and to illustrate by cards upon the desks, and also by marks upon the slates. Suppose the white card had the following upon it: —

$$6+4=$$

Children would read 6+4 =, and they would place 6 cards in the first line at the right of the box, and 4 cards immediately below in another line. The work on the slate would be thus: —

$$\begin{array}{l} 6+4= \\ ||||||=6 \\ ||||=4 \\ 6+4=10 \end{array}$$

After the colored cards have been examined by the teacher, to see if they were arranged according to the numbers on the white card (always obliging the children to place the number of cards in the first line to correspond with the first number on the white card, the second line of cards to correspond with the second number on the white card), the white cards are collected by the teacher, and the children look at the colored cards, and repeat thus: 6 cards and 4 cards are 10 cards. From the slate they would read thus: 6 and 4 are ten.

Each child answers according to his own arrangement of cards. Commencing with a different line of scholars every lesson, each child, after he has recited his own numbers, is allowed to arrange all the cards from his box, upon the desk, in any proper form he may choose, thereby keeping him employed, and developing his own ideas of form. Sometimes they make letters, vertical lines, horizontal lines, a series of steps, squares, etc.

After all the lines of children have recited, at a given signal the children put cards in boxes (boxes remaining on the desks), hands on covers, covers on boxes, boxes in laps, boxes in right-hand corners of the desks.

Practical questions of imaginary or concrete objects are represented by cards, also by lines upon the slates, by the children.

After the children are thorough upon the principle of adding numbers, the sum of which is 10, we proceed gradually in the same manner to add numbers, the sum of which would be 20. They also commence at this stage of knowledge, at first by objects, afterwards abstractly, to count by 2's to 100, both odd and even numbers, also to add 2 promiscuously to any number less than 100.

When the principle of adding is thoroughly understood, we consign it to oblivion for a season (so as not to perplex the young minds with the principle of Addition and Subtraction at the same time), and begin to develop Subtraction.

SUBTRACTION.

With the children's knowledge of Number and Addition, they have quite a firm basis for starting upon a higher and more difficult principle. The sign of Subtraction,— (less), is explained to them. It signifies that the number on the right of the sign is to be taken from the number on the left, or the smaller number is to be taken from the larger. Like the other signs which the children have been taught, they understand their practical significance, but no definitions are required of them.

One book is brought before the class, the children tell how many they see, then the book is placed away, and they readily see there are none left. One card is placed on the desk at the right of the box, and then one card is taken away (from the card on the desk, and not from the open box) and removed to the very edge of the desk at the right hand, and the children quickly see that no cards remain, and they read looking at the cards, 1 card less one card are 0 cards. On the slate the work would stand as follows:—

$$1 - 1 =$$
$$1 - 1 = 0$$

The children would read looking at the slate, 1—1 =0.

We proceed to take I from 2, 3, 4, 5, 6, 7, 8, 9 and 10, and gradually to progress to take one number from another which shall not exceed 10.

White cards are prepared by the teacher, one number to be subtracted from another, the minuend not exceeding 10. These white cards are worked out by the children, with the colored cards on the desks, and also with the vertical lines on the slates. Suppose the white card had upon it the following:—

$$10 - 7 =$$

Children would read 10—7 =, and they would place 10 cards on the desk at the right of the box, and then place 7 cards away at the right-hand edge of the desk. They would readily see how many cards they had at first, how many they had taken away, and how many they had left. They would read, looking at the cards, 10 cards less 7 cards are 3 cards. Teacher would represent on the board, and the children would copy on the slates as follows: —

$$10 - 7 =$$

| | | ┃ | | | | | | |

$$10 - 7 = 3$$

Children tell how many lines to make at first, to correspond with the first number on the white card, how many lines to take away, to correspond with the second number on the white card, how many there would be left, and they read, looking at the slates, $10 - 7 = 3$.

Each child has a white card with different numbers upon it, according to which numbers the colored cards on the desks, also the lines upon the slates, are to be arranged, and after the cards and lines have been examined by the teacher, the white cards are collected, and the children look at the colored cards and at the slates, and read according to their own arrangement.

By using the white cards (which the children are not allowed to touch), with the numbers upon them for Addition and Subtraction, for the children to work out, with colored cards upon the desks, and also with lines upon the slates, many advantages are secured. They familiarize the children with the figures and signs; they serve to economize the teacher's voice; a greater variety of combinations than would directly suggest themselves to the teacher's mind is grasped; and time and accuracy are gained.

During the present term from September to February, this work was accomplished in the Fifth Class of a Primary School, but a grand and thorough preparatory training had been successfully drilled through the two Sixth Classes, from which this Fifth class was formed.

DR. LEIGH'S METHOD.

In my last report I stated that this method was in successful use in the Primary Schools of eleven districts. During the last year it has been introduced into some other districts. This method consists in the use of reading books for beginners, printed in what is called "pronouncing type." The Roman letters are modified to indicate their different sounds. By this method, beginners in reading are not taught the names of the letters at first; they are taught only the sounds. Dr. Leigh has devoted himself for many years to the invention and development of this method, with a patience and perseverance worthy of all praise.

This system is described by the author in the following language: —

> "What is it? It is orthography, the common orthography of our books and newspapers. It is not Phonotypy; the spelling is not changed, every word being printed and spelled according to our standards, Webster or Worcester.
>
> But it is a PRONOUNCING Orthography. It shows the exact pronunciation of every word. A special form of a letter is used for each sound of it. Letters which have no sound are printed in a hair-line or light-faced type. It thus shows the pronunciation without changing the spelling, and even preserves the familiar form, or face, of the words as we are accustomed to see them in

our books and newspapers. Words printed with this type differ less from those on this page in the common Roman print, than *italic* words do, or those printed with most of the fancy types so much used in our newspapers and advertisements. In this way, without doing any harm, it does great good. It does for the reading lessons in the child's primer, what Webster's or Worcester's accent marks do for the words in their dictionaries; only it avoids the use of the accents, which would be a blemish to the page, and would not be practical or useful enough for the children. It is designed and used, not for the dictionary merely, but for the primer, making every word, and line, and page, a pronouncing dictionary for the learner, always under his eye, that he can use with ease and certainty at the very time he needs it. It thus combines in one our *two* English languages, — the written and the spoken, — which have been hitherto so widely separated by our difficult and irregular orthography. It is not a new book, but a way of printing any primary book, the very same books which have long been approved and used in our schools, as will be seen from the list given below.

It is not a new method of teaching (though it does lead to improved methods), but is applicable to any good method now in use and auxiliary to it, preserving all that is good, and adding much that is of the greatest value."

For several years it has been optional with the District Committees to adopt this system or not. Its success, where it has been used, has been so decided, that it seems desirable that it should be made obligatory in all the districts.

The following points, which were drawn up by the author of the system, will serve, not only as a guide in investigating the results of the use of the method, but also as hints which may be turned to good account by the teachers who use it.

"In all the inquiries into the results of the use of Pronouncing Orthography in the Boston schools, let me ask attention to the following points: —

1. The facility with which the pupils learn the phonic letters and their sounds, as compared with the ordinary learning of the letters of the alphabet and their names.

2. The interest which the pupils take in learning and practising the sounds.

3. The interest they take in spelling by sound, and in finding out the spoken words from the sound of the letters, and the advantage of this.

4. That they learn *all* the sounds.

5. How well they spell by sound.

6. Their rapid progress in learning to read.

7. Their correct and distinct pronunciation.

8. How *soon* they may be taught to read fluently and naturally.

9. That, in learning to read in this print, they are learning to read in common print; there is really no *transition* to make.

10. The correction of foreign brogue, accent and bad pronunciation.

11. The distinct utterance of every sound; the correction of *careless* utterance.

12. The cultivation of self-reliance, and self-help. The pupils can *do* and *study* themselves, and not look to and lean on the teacher.

13. The cultivation of the eye and ear in discriminating the various forms and sounds of the letters and the habits and power of observation thus acquired, with their future influence, extending, as it must, to all their future reading, writing, and spelling.

14. The cultivation of the vocal organs by this constant practice and drill.

15. The training of the mind to order, regularity, consistency, truthfulness in school, and in books, such as the child meets with in nature out-of-doors.

16. The importance of the immense saving of time (doing two years' work in one), especially to those children who, in Boston, have but four or five years' schooling, and in most cities and towns but two or three.

17. The *uniformity* of these results in all the schools, here and elsewhere, where this print has been used, and the very strong and decided testimony of most, if not all of the teachers.

18. The difficulties and objections have been only in anticipation, and have vanished before experience Teachers who began with reluctance and doubt, have uniformly succeeded before reaching the end of the primer, and have become decidedly in favor of the method.

19. That these are the results of several years' experience, in various parts of the country, with all sorts of teachers, in several thousands of schools, and that as yet I know of not one real exception.

20. That these results have been obtained under many disadvantages. The print and the method were both new to the teacher; the books used were the old books, merely printed in the new type, and were not prepared and arranged in progressive lessons suited to the new print and method. The teacher had no minute and special directions, and guides in teaching, but each was left mainly to her own wit and the blackboard. Experience, too, has shown that, in some respects, the suggestions made

by me to the teachers and the ways of teaching indicated, were not so good as has since been found out. With increased facilities and advantages of so many years' experience by so many excellent teachers, it is certain that very much better results will be secured, than even the remarkable ones already reported."

EXPENDITURES FOR SCHOOLS.

The following table shows the ratio of the *total school expenditures*, including school-houses and lots, as compared with the *total city tax for all purposes*, for two decades, expressed in decimals: —

Decade from 1841-1851.		Decade from 1861-1871.	
1841–42	25.0	1861–62	22.9
1842–43	21.7	1862–63	17.9
1843–44	28.2	1863–64	13.2
1844–45	27.6	1864–65	14.3
1845–46	28.8	1865–66	13.0
1846–47	32.0	1866–67	11.7
1847–48	34.3	1867–68	13.7
1848–49	26.8	1868–69	21.5
1849–50	26.5	1869–70	20.9
1850–51	25.7	1870–71	17.4
Average....	27.6	Average....	16.6

From the above table it appears that, for the ten years ending 1851, the average ratio of the school expenses, as compared with the total city tax, was 27.6, while for the last ten years the ratio averaged only 16.6. So that, if we should increase our school expenses fifty per cent. and more, we should only stand *relatively* where we stood twenty or twenty-five years ago. This statement is not made as a reason for any special increase of the outlay for schools, but I present the fact as it is, as an answer to the random and sweeping charges which are not unfrequently made against the management of the School Committee, with reference to economy in financial matters.

Respectfully submitted, by

JOHN D. PHILBRICK,
Superintendent of Public Schools.

MARCH, 1872.

TWENTY-FIFTH
SEMI-ANNUAL REPORT.

To the School Committee of Boston: —

GENTLEMEN, — In conformity with the requirements of your regulations, I respectfully submit the following as my Thirty-seventh Report, the Twenty-fifth of the semi-annual series.

SUMMARY OF STATISTICS

FOR THE SCHOOL YEAR ENDING AUGUST 31, 1872.

I. POPULATION.

Population of the city, U S. Census, 1870		250,701
Number of persons in the city between five and fifteen years of age, May 1, 1872		46,144
Increase for the year	174	

II. SCHOOLS.

Number of districts into which the schools are grouped for supervision	30
Number of High Schools	5

Latin School, for boys.
English High School, for boys.
Girls' High and Normal School, for girls.
Highlands High School, for boys and girls.
Dorchester High School, for boys and girls.

Number of Grammar Schools		37
For boys, 10 ; for girls, 10 ; for boys and girls, 17.		
Number of Primary Schools for boys and girls		335
Increase for the year	8.	
Number of schools for licensed Minors		2
School for Deaf-Mutes		1
Kindergarten School		1
Whole number of day schools		381
Increase for the year	8.	
Number of Evening Schools		11
Whole number of day and evening schools		392
Increase for the year	8.	

III. SCHOOL-HOUSES.

Number of school-houses for High Schools	5
School-rooms, 45 ; class-rooms, 24 ; halls, 6 ; seats, 2,350.	
Number of school-houses for Grammar Schools	37
School-rooms, 431 ; halls, 30 ; seats, 23,842.*	
Number of school-houses for Primary Schools belonging to the city now occupied	61
School-rooms, 334 ; seats, about 18,700.	
High School divisions in Primary School-house	3
Grammar School divisions in Primary School-houses	23
Grammar School divisions in hired buildings	1
Primary Schools in Grammar School-houses	29
Primary Schools in Ward-rooms	1
Primary Schools in hired buildings	15
Number of Ward-rooms in Grammar School-houses	2
Number of Ward-rooms in Primary School-houses	4

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* Dorchester buildings reckoned as Grammar school-houses, with an average of 50 seats to a room; the other buildings reckoned at 56 seats to a room.

IV. TEACHERS.

Number of teachers in High Schools		77
Male teachers, 43 ; female teachers, 34.		
Increase for the year	7.	
Number of teachers in Grammar Schools		487
Male teachers, 71 ; female teachers, 416.		
Increase for the year	10.	
Number of teachers in Primary Schools		336
Male teachers, 1 ; female teachers, 335.		
Increase for the year	8	
Number of teachers in the schools for Licensed Minors, females		2
Number of teachers in Deaf-Mute School, females		3
Number of teachers in Kindergarten School, female		1
Number of teachers in Evening Schools		95
Male teachers, 32 ; female teachers, 63.		
Number of teachers in day schools		906
Whole number of teachers		1,001
Male teachers, 147 ; female teachers, 854.		
Regular teachers, 963 ; special teachers, 38.		
Aggregate increase for the year.		11

V. PUPILS.

Average whole number of pupils belonging to day schools of all grades during the year	36,234
Ratio of the number of pupils belonging to the schools to population of the city	.14
Ratio of the number of pupils belonging to the schools to school population	.78
Average daily attendance of pupils in all the day schools	33,502
Average daily absence of pupils in all the day schools	2,732
Average per cent. of attendance of all the day schools	92.4

Average whole number of pupils belonging to the High Schools	1,640
Boys, 873 ; girls, 767.	
Average daily attendance at High Schools	1,553
Per cent. of attendance at High Schools	93.8
Average number of pupils to a regular teacher in High Schools	26.0
Average whole number of pupils belonging to Grammar Schools	19,760
Boys, 11,343 ; girls, 8,417.	
Average daily attendance at Grammar Schools	18,500
Per cent. of attendance at Grammar Schools	92.8
Average number of pupils to a regular teacher in Grammar Schools	42.6
Average whole number belonging to Primary Schools	14,716
Boys, 8,093 ; girls, 6,623.	
Average daily attendance at Primary Schools	13,351
Per cent. of attendance at Primary Schools	89.8
Average number of pupils to a regular teacher in Primary Schools	43.9
Average whole number belonging to the schools for Licensed Minors	59
Average daily attendance at schools for Licensed Minors	51
Average whole number belonging to School for Deaf-Mutes	41
Average whole number belonging to Evening Schools	2,072
Average attendance at Evening Schools	1,140
Average whole number belonging to Evening Drawing School	400
Aggregate whole number belonging to day and evening schools	38,688

VI. EXPENDITURES.

Salaries of Officers of School Committee and Truant Officers		$23,281 66
Salaries of Teachers, High Schools		125,388 34
Grammar Schools Primary Schools		711,744 13
Licensed Minors' School		1,400 00
Deaf-Mute School		3,790 00
Evening Schools		20,678 00
Kindergarten School		658 34
Whole amount of salaries of teachers		863,658 81
Incidental expenses		329,639 18
By Com. on Public Buildings	$260,895 72	
By School Committee	68,743 46	
Whole amount of incidental expenses, including salaries of officers		352,920 84
Whole amount of current expenses for all the day and evening schools and salaries of officers		1,216,579 65
Expenditures for school-houses and lots		97,800 68
TOTAL EXPENDITURES FOR ALL SCHOOL PURPOSES		1,314,380 33
Cost per scholar based upon the average whole number belonging —		
For tuition,		
All day schools		23 83
For incidentals,		
All day schools		9 74
For both tuition and incidentals,		
All day schools		33 57
Whole amount appropriated by the City Council for salaries, and ordinary or current expenses of schools for the financial year, *beginning* May 1, 1872		1,251,600 00
Distribution of the appropriation.		
Salaries of officers	$24,000 00	
Salaries of teachers	919,600 00	
Incidentals, — Committee on Public Buildings	235,000 00	
Incidentals, — School Committee	73,000 00	

Total amount of appropriations voted by the City Council for 1872–73	9,861,032 00
Amount assessed for State, County and City taxes for the financial year 1872–73	7,759,842 00
Ratio of the amount appropriated for the *current* expenses of the Public Schools, to the total amount of appropriations of the city for the year 1872–73	.12+
Ratio of the amount appropriated for the *current* expenses of the Public Schools, to the whole amount to be raised by taxation for the year 1872–73	.16+
Valuation of the city, May, 1872	682,724,300 00
Per cent. of valuation of 1872, appropriated for Public Schools	.001–83
Valuation of the city, May, 1865	371,892,775 00
Per cent. of valuation of 1865 appropriated for Public Schools for the year 1870–71 . .	.002–98
Average percentage of the valuation of 1865, of the cities and towns of the State, appropriated for Public Schools, to be expended in the year 1870–71	.003–25
Amount received from the income of the State School Fund	9,363 24

By comparing the above summary with that of last year's report I find that the increase in the average whole number of pupils belonging to the day schools has been only *sixty*, while the increase in the number of teachers in these schools has been *twenty-five*. It appears also that, notwithstanding the small increase of pupils, the increase in the current expenses has been $84,980.29; but, as the expenditures for new school-houses were far below the average, the total amount expended for schools shows a decrease of $260,898.74.

PRIMARY SCHOOLS.

The attendance at these schools during the last half-year, as compared with that of the corresponding six months of the preceding year, was as follows: —

The average whole number of pupils belonging was 14,199 against 14,793, the *decrease* being 594; the average daily attendance, 12,814 against 13,404, showing a *decrease* of 590; and the per cent. of attendance, 89.8 against 89.4, the *increase* being four-tenths of one per cent. The whole number belonging at the date of the closing of the schools in July was 14,610 against 14,660, the decrease being 50.

The considerable decrease in the average whole number belonging and in the daily attendance, as shown above, was due mainly, I think, if not wholly, to the unusual severity of the weather during the winter and early spring; for, as the summer advanced, the number increased until the closing of the schools in July, when it reached very nearly that of the same date in the preceding year.

The whole number of regular teachers belonging to this grade of schools at the end of the school year was 335, against 327 last year.

The classes at the end of the year were as follows: —

Classes.	No. Aug. 31, 1872.	Per cent.
First Class	2,447	.17
Second Class	2,390	.16
Third Class	2,184	.15
Fourth Class	2,209	.15
Fifth Class	2,235	.15
Sixth Class	3,145	.22

The ages of the pupils at the end of the year were as follows: —

Ages.	No. Aug. 31, 1872.	Per cent.
Five years of age	2,355	.16
Six years of age	3,288	.23
Seven years of age	3,531	.24
Eight years of age	2,725	.19
Nine years of age and over	2,711	.18

It is gratifying to find that the number of pupils in the first class was so large, it being larger than that in any other class except the sixth, and considerably above the average of the classes, including the sixth. It is evident therefore that the pupils have been carried upward through the several grades with a good degree of regularity. The aim should be to keep the number in the upper classes at least equal to that in the lower classes. In a few of the districts the proportion of pupils in the sixth class is still larger than it should be.

The ages stand very nearly as they did last year. There has been a slight falling off in the number of those who are five years of age, and a corresponding increase of those who are seven. The aim should be to transfer the pupils from the Primary to the Grammar School grade at the age of eight years, that is, before the completion of the ninth year. Pupils of fair capacity, and from intelligent families, who do not enter school until six years of age, can be easily fitted in two years to pass examination for admission to the Grammar School grade.

The following table shows the number of primary pupils in each district, and the *average number of pupils to a school, or teacher, during the last half year:*—

DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.	DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.
Adams	9	397	44.1	Lewis......	10	437	43.7
Bigelow ...	13	532	40.9	Lincoln	11	532	48.3
Bowditch ..	10	332	33.2	Lyman.....	7	300	42.8
Bowdoin ..	11	440	40.0	Mayhew ...	7	264	37.8
Boylston...	7	327	46.7	Norcross ...	14	573	40.9
Brimmer ..	12	415	34.5	Phillips	7	272	38.8
Chapman ..	10	432	43.2	Prescott....	9	414	46.0
Comins	16	796	49.7	Quincy	10	403	36.6
Dearborn ..	17	758	44.5	Rice	10	385	38.5
Dorchester.	20	839	41.1	Sherwin ...	12	532	44.3
Dwight	6	251	41.8	Shurtleff ...	13	607	46.6
Eliot	16	708	44.2	Washington	7	286	40.8
Everett ...	10	491	49.1	Wells......	12	465	38.7
Franklin ..	6	263	43.8	Winthrop ..	9	339	37.6
Hancock...	19	802	42.2	Training ...	2	100	50.0
Lawrence .	12	507	42.2	Totals....	335	14,199	42.3

The above table deserves special attention. It will be seen that there is a great disparity in the number of pupils to a school. Only two districts have kept up to the standard.

The average number of pupils to a teacher during the last half-year was *forty-two and three-tenths*, against *forty-five and two-tenths* for the corresponding six months of the preceding year. Fifteen years ago the Primary Schools averaged *sixty* pupils to a teacher. They were then without desks and unclassified. At that time I urged upon the Board the desirableness of limiting the maximum number to fifty-six. This was at length done, although not without strenuous opposition. We are now, it seems to me, swinging into the opposite extreme, and reducing the number of pupils to a teacher to a point, which, in view of our admirable classification and other facilities for instruction and management, is not quite justifiable on the score of economy. Something more than three years ago it was found that the average number of pupils to a teacher was less than 47, although the standard number fixed by the regulations was 56. After a full discussion of the subject in the Board, it was decided to reduce the standard number to 49, thus making the regulation respecting this matter more nearly conform to the existing average to a teacher. Since that time the number of pupils to a teacher has been constantly on the decrease, the standard fixed by the regulations being little regarded. In the old sections of the city, where business is encroaching upon the population, it is not to be expected that teachers will be summarily dismissed as soon as the average fall below the prescribed standard, thus interfering with the classification. But in those sections where the population is on the increase we should naturally expect that each room would have its full complement of pupils.

The following table shows the number of primary pupils in each district promoted to the Grammar Schools, July, 1872, and the average number of promotions to each school in the respective districts: —

DISTRICTS.	No. of Schools.	Sent to Gr. Sch.	No. to a School.	DISTRICTS.	No. of Schools.	Sent to Gr. Sch.	No. to a School.
Adams	9	84	9.3	Lewis......	10	82	8.2
Bigelow ...	13	80	6.1	Lincoln	11	100	9.0
Bowditch ..	10	63	6.3	Lyman	7	52	7.4
Bowdoin ..	11	79	7.1	Mayhew ...	7	47	6.7
Boylston ..	7	59	8.4	Norcross ...	14	86	6.1
Brimmer ..	12	69	5.7	Phillips	7	28	4.0
Chapman ..	10	58	5.8	Prescott ...	9	70	7.7
Comins	16	100	6.2	Quincy	11	70	6.3
Dearborn ..	17	118	6.9	Rice	10	63	6.3
Dorchester.	20	180	9.0	Sherwin....	12	107	8.9
Dwight	6	48	8.0	Shurtleff...	13	91	7.0
Eliot	16	103	6.4	Washington	7	30	4.2
Everett	10	76	7.6	Wells	12	71	5.9
Franklin...	6	44	7.3	Winthrop ..	9	66	7.3
Hancock ..	19	94	4.9	Training ...	2	....	....
Lawrence ..	12	69	5.7	Totals	335	2,287	6.8

The number of pupils promoted to the Grammar Schools in July was 2,287; the number promoted January 31 was 1,983; the total for the year was 4,270 against 4,634 for the preceding year, the *decrease* being 364.

The supervision exercised over the Primary Schools by the masters of the Grammar Schools is producing good results, on the whole; some of the masters, however, very evidently do more and better work than others in this department.

There is no new development in the management or instruction requiring special mention, except in the matter of drawing. After the teachers began their lessons at the Normal Art School, an improvement in the drawing in their schools was immediately visible.

The method of teaching the first steps of reading by the use of Dr. Leigh's "pronouncing type" has been steadily gaining in favor among our teachers. A year ago it was used in eleven districts and about thirty schools; it is now found in *twenty-three* districts and upwards of *sixty schools*. It has had a thorough and protracted trial, and the result has been in a high degree satisfactory. I am now ready to give the system a cordial endorsement, and I hope the Board will, without delay, make its use obligatory in all the districts.

The following is the tabulated result of inquiries addressed to the masters respecting the introduction of Dr. Leigh's method into the schools of their respective districts: —

DISTRICTS.	Whether taught or not.	In how many Schools.	How long it has been taught.
Adams	Yes.	Four.	Three years.
Bigelow	Yes.	Three.	Four years.
Bowditch	No.	. . .	. . . .
Bowdoin	Yes.	One.	Four years.
Boylston	Yes.	Four.	Seven months.
Brimmer	Yes.	Two.	One month.
Chapman	Yes.	Four.	Three years.
Comins	Yes.	Two.	One year.
Dearborn	No.	. . .	. . . .
Dwight	Yes.	Two.	About three years.
Eliot	No.	. . .	. . . .
Everett	No.	. . .	. . . .
Everett, Dorchester	No.	. . .	. . . .
Franklin	Yes.	Two.	Seven months.
Gibson	Yes.	One.	Two years.
Hancock	No.	. . .	. . . .
Harris	Yes.	One.	Five months.
Lawrence	Yes.	Five.	Three years.
Lewis	Yes.	One.	One month.
Lincoln	Yes.	Six.	Five or six years.
Lyman	Yes.	One.	Three years.
Mayhew	No.	. . .	. . . .
Mather	Yes.	Two.	Six months.
Minot	No.	. . .	. . . .
Norcross	Yes.	Three.	Three years.
Phillips	No.	. . .	. . . .
Prescott	Yes.	Six.	Three years.
Quincy	No.	. . .	. . . .
Rice	Yes.	Four.	Two years.
Sherwin	Yes.	Three.	One year.
Shurtleff	No.	. . .	. . . .
Stoughton	Yes.	Four.	One year.
Tileston	Yes.	One.	Six months.
Washington	Yes.	Two.	Two years.
Wells	No.	. . .	. . . .
Winthrop	No.	. . .	. . . .

GRAMMAR SCHOOLS.

The attendance at these schools during the last half year, as compared with that of the corresponding six months of the preceding year, was as follows: —

The average whole number of pupils belonging was 19,914 — boys 10,478 and girls 9,436 — against 19,297, the *increase* being 617; the daily average attendance, 18,527 against 17,939, and the per cent. of attendance 92.8 against 92.3. The whole number of regular teachers in this department at the end of the last school year was 464; males 66, females 398. In addition to these there were eighteen teachers of sewing, three teachers of music, seven teachers of drawing, who divided their time between these schools and the High Schools, and for a part of the year a teacher of vocal culture.

The whole number of pupils on the register at the close of the school year was 17,102. These pupils were classified as follows: —

Classes.	No. Aug. 31, 1872.	Per cent.
First class (highest)	1,285	.08
Second class	1,833	.11
Third class	2,481	.14
Fourth class	2,858	.17
Fifth class	3,826	.22
Sixth class	4,819	.28

Ages.	No. Aug. 31, 1872.	Per cent.
Under eight years	126	.01
Between eight and ten years	3,221	.19
Between ten and twelve years	5,687	.33
Between twelve and fourteen years	5,051	.29
Between fourteen and fifteen years	1,813	.11
Over fifteen years	1,204	.07

In my last report I called attention to the fact that the returns of the classification of the Grammar Schools were not strictly correct. Pupils were designated, in certain schools, by higher ranks in the grades than those to which they actually belonged. The above table of classification is believed to be a nearer approximation to strict accuracy than that which was reported last March. Still, I am quite sure it is not as accurate as it should be. If, on visiting a Grammar School room, I ask the teacher what the class is *called*, and then on further inquiry find that the pupils are not up in all their studies to the rank, grade, or class by which they are designated and known in the school, I think I may fairly infer that the returns of classification from that school are not as reliable as they should be. The authorized programme is the only recognized standard of classification. If the classes are not named and reported in accordance with their actual proficiency in the regularly prescribed course of study, how is the School Board to get any reliable information as to the general progress of our school system as a whole, or as to the comparative standing of the individual schools? A member of the Board who wants to get at a general knowledge of the condition of our Grammar Schools, outside of those schools with which he is especially connected, would naturally first look at the requirements of each step of the programme, and then he would look to see how many pupils in each school were found in the respective steps or grades into which the programme is divided; and finally he would look at the report of the ages, to see how they compare with the numbers in the respective classes.

If he should find, for instance, the ages in a certain school ranging high, and the classes low, he would probably not place that school high in the scale of merit. But if the report of the classification is inaccurate, he is without any firm ground on which to base an opinion. It is hoped, therefore, that in future every return will show the classification precisely as it is.

The following table shows the number of teachers and average whole number of pupils, and the average number of pupils to a teacher (not counting the master's head assistant), in each Grammar School, for the half year ending August 31, 1872.

SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams	12	539	49.0	Lawrence ..	18	875	51.4
Bigelow	20	900	47.3	Lewis	13	589	49.0
Bowditch ...	14	518	39.8	Lincoln.....	18	772	45.5
Bowdoin ...	12	511	46.4	Lyman	12	467	42.4
Boylston ...	11	414	41.4	Mayhew	13	475	39.5
Brimmer ...	16	649	43.2	Norcross....	15	695	49.6
Chapman ...	13	576	48.0	Phillips.....	13	581	48.4
Comins.....	18	844	49.6	Prescott	14	611	47.0
Dearborn ..	17	771	48.1	Quincy	14	601	46.2
Dorch'r Dis.	33	1,110	42.8	Rice........	15	639	45.6
Dudley.....	7	269	44.8	Sherwin	17	799	49.9
Dwight.....	13	622	51.8	Shurtleff....	15	662	47.2
Eliot.......	16	787	52.4	Washington .	7	256	44.0
Everett.....	15	681	48.6	Wells	11	444	44.4
Franklin ...	15	622	44.4	Winthrop ...	18	761	44.7
Hancock....	19	874	48.5	Totals	464	19,914	46.8

The following table shows the increase and decrease in the number of pupils in the respective Grammar Schools during the past year, the first column showing the average number belonging for the half year ending August 31, 1871, and the second for the half-year ending August 31, 1872: —

SCHOOLS.	Aug. 31, 1871.	Aug. 31, 1872.	Decrease.	Increase.	SCHOOLS.	Aug. 31, 1871.	Aug. 31, 1872.	Decrease.	Increase.
Adams	549	539	10	....	Lawrence ..	874	875	....	1
Bigelow.....	866	900	....	34	Lewis......	513	589	....	76
Bowditch	573	518	55	....	Lincoln	752	772	....	20
Bowdoin	509	511	....	2	Lyman.....	504	467	37	....
Boylston	415	414	1	....	Mayhew....	505	475	30	....
Brimmer	673	649	24	....	Norcross....	700	695	5	....
Chapman....	488	576	....	88	Phillips	602	581	21	....
Comins......	790	844	....	54	Prescott ...	551	611	....	60
Dearborn....	716	771	....	55	Quincy.....	649	601	48	....
Dorch'r Dis't	990	1110	....	120	Rice	559	639	....	80
Dudley......	243	269	....	26	Sherwin....	746	799	....	53
Dwight......	576	622	....	46	Shurtleff ...	614	662	....	48
Eliot........	773	787	....	14	Washington	241	256	....	15
Everett......	625	681	....	56	Wells......	474	444	30	....
Franklin	623	622	1	....	Winthrop ..	714	761	....	47
Hancock	890	874	16	....	Totals	19,297	19,914	278	895

From the above table it appears that the number of pupils is falling off in all the schools in the old city proper, while there has been an increase in East Boston, South Boston, Roxbury and Dorchester.

The following table shows the number of scholars who received the diploma of graduation, at the close of the schools for the year, in July, 1872, in each Grammar School:—

SCHOOLS.	Boys.	Girls.	Total.	SCHOOLS.	Boys.	Girls.	Total.
Adams	23	14	37	Lewis	16	23	39
Bigelow	36	..	36	Lincoln	26	22	48
Bowditch	..	18	18	Lyman	12	11	23
Bowdoin	..	30	30	Mather	1	5	6
Boylston	9	10	19	Mayhew	17	..	17
Brimmer	40	..	40	Minot	4	3	7
Chapman	1	20	21	Norcross	..	42	42
Comins	19	25	44	Phillips	17	..	17
Dearborn	19	14	33	Prescott	20	14	34
Dudley	..	14	14	Quincy	22	..	22
Dwight	44	..	44	Rice	29	..	29
Eliot	22	..	22	Sherwin	12	7	19
Everett	..	41	41	Shurtleff	..	34	34
Everett, Dor.	4	5	9	Stoughton	3	4	7
Franklin	..	33	33	Tileston	3	3	6
Gibson	2	2	4	Washington	11	..	11
Harris	16	6	22	Wells	..	18	18
Hancock	..	30	30	Winthrop	..	32	32
Lawrence	41	..	41	Total	469	480	949

It appears that the whole number of graduates was 949, the increase for the year being 45. By an inspection of the list it will be seen that there is a great inequality in the number of graduates from the different schools. As the number of graduates turned out by a school, taking two or three years together, is one of the tests by which its merits ought to be determined, it is important that the Committee on each school should look to this matter with a good degree of scrutiny. By looking back and examining the statistics of several years past relating to this matter, it will be seen that some schools have averaged a much lower per cent. of graduating diplomas than others. It is obvious enough that a perfect equality in this respect ought not to be looked for, and yet the difference in the circumstances of the schools does not, in all cases, as it seems to me, adequately account for the disparity in the number of their graduates. Nor can this disparity be accounted for on the ground of the difference of the standards and tests of their respective committees. All the committees are bound by the same provision of the regulations, which requires that diplomas of graduation "shall be awarded to those pupils of the graduating class of each Grammar School, who have, in the opinion of the District Committee, properly completed the prescribed course of study, and whose deportment during the year has been generally satisfactory." After making due allowance for every other influence that can affect the number of graduates, it must be admitted that the management of the masters has a great deal to do with it. For one, I wish to see our system of elementary education carried to such a degree of perfection that every child shall substantially complete the Grammar School course of study, which comprises nothing more than what belongs to a good common-school education.

HIGH SCHOOLS.

The average whole number of pupils belonging to these schools during the last *half-year* was 1,557 — boys 826, and girls 731 — against 1,501 for the corresponding six months of the preceding year; the average daily attendance was 1,457, and the average per cent. of attendance was 92.3. The number of regular teachers was 63; males 31, and females 32. Besides there were 16 special teachers of military drill, drawing, music, French and German.

The following table shows the number of regular teachers, the average number of pupils, and the average number of pupils to a regular teacher, in each of the High Schools, during the half-year ending August 31, 1872: —

SCHOOLS.	No. of Reg. Teachers.	Average No. of pupils.	Averag No. of pupils to a Reg. Teacher
Latin	11	191	17.3
English High	17	491	28.8
Girls' High and Normal	24	558	23.7
Roxbury High	6	194	32.3
Dorchester High	5	123	24.6
Totals	63	1,557	24.7

It appears from the above table that the High Schools have had an average of less than twenty-five pupils to a regular teacher. As the average annual cost of tuition per pupil in these schools is about *eighty dollars*, by giving to each teacher only one additional pupil, the saving would be about *five thousand* dollars.

The following table shows the classification of the High Schools at the close of the school year: —

SCHOOLS.	Advanced.	CLASSES.						
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Totals.
Latin	......	18	22	28	21	9	53	......
English High	10	99	140	218	......	......	......	......
Girls' High	37	109	158	212	......	......	......	......
Roxbury High	7	42	61	69	......	......	......	......
Dorchester High	1	42	34	43	......	......	......	......
Totals	55	310	415	570	21	9	53	......
Percentage	.03-8	.21-6	.28-9	.39-7	.01-4	.00-6	.03-6	......

It appears that upwards of *twenty-five* per cent. of the High School pupils are in the first and advanced classes, — a very good proportion. As the Latin School has twice as many classes as the other schools, its first class is on an equal footing with those of the others when its percentage is half as high.

The following table shows the attendance during the last *year:* —

	Boys.	Girls.	Total.
Average whole number	874	766	1,640
Average attendance	841	712	1,553
Per cent. attendance	....	....	94.6

The average number belonging during the past year was 139 in excess of the number belonging during the preceding year. This increase is in itself considerable, and its significance is enhanced by the fact that our school population has, during the last few years, gained but little.

The following table shows the number of scholars who received the diploma of graduation at the close of the school year, in each of the High Schools: —

Schools.		Boys.	Girls.	Total.
Latin		18	..	18
English High		99	..	99
Girls High and Normal	Regular course	..	91	91
	Regular and extra	..	6	6
	Training Department	..	28	28
Roxbury High		14	28	42
Dorchester High		14	29	43
Total		145	182	327

The following table shows the number of pupils admitted at the July and September examinations, and the number of those who actually joined the High Schools: —

	Boys.	Girls.	Total.
Admitted	508	456	964
Joined	401	346	747
Difference	107	110	217

The number of pupils admitted was 96 more than that of the preceding year; but the number of those who actually joined was only 20 more.

Of the whole number admitted, 871 were sent up from the Grammar Schools, this number being 78 less than that of the graduates of these schools.

It appears that 217 candidates were admitted on examination, who did not present themselves as pupils at the beginning of the school year. The number of candidates who take the examination without intending to enter upon a course of High School education has increased quite rapidly during the past four or five years. This is owing, no doubt, to the growing custom, among the masters of the Grammar Schools, of advising their graduates to take the examination, even though they may not have decided to become High School pupils. This practice may not be regarded with favor by the head-masters of the High Schools, who are thereby put to the trouble of examining many candidates who do not enter their schools; but on the other hand it enables the masters of the Grammar Schools to show how many pupils they have qualified to pass the examination.

LATIN SCHOOL.

The average whole number of pupils belonging during the last half-year was 191, against 213 for the corresponding six months of the preceding year; the average daily attendance was 174, and the per cent. of attendance 91. These pupils were taught by one head-master, ten masters, and four special teachers, namely, one of the French language, one of music, one of drawing, and one of military drill.

The following table shows the number and average age of boys admitted to the Latin School from each Grammar School, and also the number admitted from other sources, during the year ending September 14, 1872: —

Boys' and Mixed Schools, Roxbury and Dorchester excluded.	No. Admitted.	Average Age.	Boys' and Mixed Schools, Roxbury and Dorchester excluded.	No. Admitted.	Average Age.
Adams	2	15.25	Mayhew	1	12.25
Brimmer	2	12.37	Minot	2	17.06
Comins	1	13.58	Phillips	7	14.29
Dwight	5	14.20	Prescott	2	13.12
Eliot	1	13.25	Rice	3	13.97
Everett (Dor.)	1	11.08	Other sources	31	15.31
Lawrence	1	12.92			
Lyman	1	14.83	Totals	60	14.68

The ages of the boys admitted were as follows: —

Between eleven and twelve, three.
Between twelve and thirteen, eleven.
Between thirteen and fourteen, twelve.
Between fourteen and fifteen, eleven.
Between fifteen and sixteen, eight.
Between sixteen and seventeen, four.
Over seventeen, eleven.

It is a fact deserving attention that the attendance at this school has been falling off for several years past. This decrease does not appear to be owing to a deterioration in the qualifications of the instructors of the school, for it has the same head-master, and it is safe to say that the average ability of the assistant masters was never higher than it is at present. And, besides, the number of teachers as compared with the number of pupils to be taught has been nearly doubled within a few years. If it is said that the demand for a classical education has diminished, the assertion seems to be contradicted by the fact that the college classes in New England are on the increase. I should like to see at least five hundred pupils in this school. This city cannot afford to have a smaller number of her best boys engaged in a course of study which aims especially at truly liberal culture. A necessary means for the attainment of this result, in my judgment, is a modification for the conditions of admission.

ENGLISH HIGH SCHOOL.

The average whole number of pupils belonging during the last half-year was 491, against 407 for the corresponding six months of the preceding year; the average daily attendance was 477, and the per cent. of attendance 97. These pupils have been taught by one head-master, five masters, eleven sub-masters, and five special teachers, namely, two of drawing, and one each of military drill, music, and the French language.

The pupils in this school are acquiring an excellent education for the practical purposes of life. The prosperity of the school, not only in respect to numbers, but also in respect to the character of the instruction, is highly gratifying.

The following table shows the number and average age of the pupils admitted into the English High School, from Grammar Schools and from other sources, at the examination of candidates, July, 1872, and also how many actually joined the school at the beginning of the school year, September, 1872: —

SCHOOLS.	No. admitted.	No. joined.	Average age.	SCHOOLS.	No. admitted.	No. joined.	Average age.
Adams	14	10	15.0	Lyman.......	10	8	14.4
Bigelow.........	32	19	14.9	Mayhew......	12	10	14.9
Boylston........	9	7	13.10	Phillips	15	14	15.9
Brimmer........	27	22	15.3	Prescott......	19	13	14.8
Chapman	6	6	14.5	Quincy.......	18	12	14.8
Dwight.........	62	52	15.2	Rice	50	41	14.11
Eliot............	21	10	14.7	Latin.........	2	1	14.11
Lawrence........	22	12	14.2	Other sources.	20	20	15.2
Lincoln	24	19	14.6	Totals........	363	276	14.9

Of those who were admitted, there were:—

Between twelve and thirteen years, thirteen.
Between thirteen and fourteen, forty-eight.
Between fourteen and fifteen, ninety-four.
Between fifteen and sixteen, seventy-nine.
Between sixteen and seventeen, thirty-three.
Between seventeen and eighteen, nine.

It appears that the number of candidates who joined the school was 276, against 248 for the preceding year, showing an increase of 28. I regret to find that the average age of the candidates is higher than it was in 1871, it being nearly *fifteen* years. This is about one year higher than it should be. It will be seen that *ninety-four* of the candidates were between *fifteen and sixteen*, and *thirty-eight* were *over sixteen.* If any member of the committee desires to know where the responsibility for retaining boys in the Grammar Schools to so mature an age lies, he has only to examine the series of tables like the above which has been printed in our reports. If boys are properly instructed and properly *promoted* in our Grammar Schools, they will be, as a general rule, well prepared for this High School at the age of fourteen years. It will be seen that the Dwight School sent a large number, sixty-two having passed the examination; the age, however, is higher than the average. The Boylston stands first in respect to age.

The following table shows the number of graduates in each year since the founding of the school: —

YEAR.	NUMBER.	YEAR.	NUMBER.	YEAR.	NUMBER.
1821	..	1839	17	1857	23
1822	..	1840	16	1858	27
1823	..	1841	15	1859	17
1824	15	1842	24	1860	28
1825	28	1843	22	1861	25
1826	12	1844	23	1862	29
1827	17	1845	24	1863	34
1828	..	1846	17	1864	17
1829	18	1847	20	1865	27
1830	17	1848	23	1866	31
1831	9	1849	20	1867	37
1832	12	1850	33	1868	41
1833	14	1851	32	1869	44
1834	18	1852	22	1870	61
1835	11	1853	29	1871	63
1836	15	1854	26	1872	99
1837	13	1855	27		
1838	15	1856	24		

It is gratifying to observe that during the past three or four years the number of graduates has been much larger than it was in previous years. The number of graduating diplomas awarded last July — *ninety-nine* — was surprisingly large. In 1864, when the graduating class numbered seventeen, I said in my report that it ought to number at least fifty. I remember very distinctly that my standard was regarded in some quarters as extravagantly high. But we have seen it exceeded all but a hundred per cent. Perhaps the entrance examination has not been, for the last two or three years, quite rigorous enough in all respects. Still, looking from the High School stand-point, I have seen no serious evil resulting from this cause. The pupils have in most cases been able to go on with the course of study, and they have generally profited by the promotion. But the Grammar masters complain that by admitting pupils to the High Schools from their second classes, the first classes are somewhat demoralized; the desire to fit themselves for admission to the High School is no longer a stimulus to application, when they see pupils admitted from a grade inferior to their own. And yet, if a Grammar master persists in keeping boys in his second class who should be in his graduating class, I would not hesitate to transfer them to the High School. I do not see so much fault to find with the carrying out of the regulation respecting the admission of pupils to the High School, as with the regulation itself. To my mind it is plain enough that the requirement for promotion to all the High Schools, except the Latin School, should be made to conform to the standard of requirement in the Grammar School programme for the graduating class.

The following table shows the whole number belonging in the month of February of each year, from 1824 to 1872: —

YEAR.	NUMBER.	YEAR.	NUMBER.	YEAR.	NUMBER.
1824	121	1841	120	1858	160
1825	121	1842	150	1859	156
1826	128	1843	170	1860	169
1827	132	1844	149	1861	171
1828	141	1845	152	1862	175
1829	114	1846	143	1863	174
1830	129	1847	141	1864	174
1831	134	1848	156	1865	200
1832	111	1849	183	1866	230
1833	112	1850	193	1867	264
1834	128	1851	195	1868	271
1835	125	1852	176	1869	309
1836	131	1853	170	1870	346
1837	115	1854	159	1871	428
1838	115	1855	162	1872	523
1839	104	1856	152		
1840	105	1857	144		

GIRLS' HIGH AND NORMAL SCHOOL.

The average whole number of pupils belonging, including the Training Department, during the last half-year was 558, against 488 for the corresponding six months of the preceding year; the average attendance was 515, and the per cent. of attendance 92.

These pupils were taught by one head-master, twenty-three female teachers, of whom twenty ranked as assistants, and two as head-assistants, and one as superintendent of the Training Department, and four special teachers, one each, in music, drawing, and the French and German languages. At the close of the year, ninety-one young ladies received diplomas of graduation in the several courses.

The following table shows the number and average age of the pupils admitted to the Girls' High and Normal School, from each Grammar School, and from other sources, and also the number of those who joined the school and entered upon the course of study in the fall of 1872:—

SCHOOLS.	No. admitted.	No. joined.	Av'age age admitted.
Adams	24	11	15.76
Bowditch	8	8	16.07
Bowdoin	21	20	16.04
Boylston	9	6	15.42
Chapman	19	8	15.48
Comins	16	11	15.32
Dearborn	5	4	16.18
Dudley	3	2	15.58
Everett	33	31	15.83
Everett (Dor.)	3	2	15.03
Franklin	29	28	15.86
Gibson (Dor.)	2	2	15.41
Hancock	20	19	15.11
Harris (Dor.)	6	4	14.54
Lewis	6	6	15.09
Lincoln	17	15	15.
Lyman	11	6	16.28
Mather (Dor.)	2	0	14.91
Minot (Dor.)	1	1	16.
Norcross	40	22	15.10
Prescott	10	10	15.47
Sherwin	3	0	15.83
Shurtleff	32	20	15.36
Wells	9	8	15.97
Winthrop	22	19	15.55
Other sources	26	23	16.78
Totals	377	286	15.68

Of the candidates from the Grammar Schools there were: —

Between twelve and thirteen, one.
Between thirteen and fourteen, twenty-five.
Between fourteen and fifteen, seventy-two.
Between fifteen and sixteen, one hundred and thirty.
Between sixteen and seventeen, eighty-four.
Between seventeen and eighteen, twenty-nine.
Between eighteen and nineteen, ten.

This school, from the date of this document, takes a new name and a new role. Instituted originally as a Normal School, with its model school for practice of the Grammar grade, then, by an extension of its course of study and the discontinuance of its model school, converted into a Girls' High and Normal School, and subsequently supplemented on the Normal side by the establishment of a "Training Department," with a Primary Model School attached, it now becomes, by the elimination from its curriculum of whatever is peculiar to a normal or training school, a "Girls' High School" in name and purpose. Henceforth it is to be an institution for the higher *general* education and culture of young ladies, without special regard to the particular pursuits, whether industrial or professional, in which they may engage.

From this date also, the school, thus modified in its design and scope, passes into the hands of a new head-master, Samuel Eliot, LL. D., late president of Trinity College, a gentleman whose ripe scholarship, high culture, large educational experience, and singular goodness, render him most fit for this high and responsible situation. And to the honor of the Board it should be said that they made choice of this eminent man to be the head of this great school, without any application on his part, or knowledge even, that he was to be voted for. His acceptance of the post cannot but be regarded with lively satisfaction by the friends of our public education who know his superior qualifications for the discharge of its duties. If now, on the one hand, he be not cramped and trammelled by unnecessary restrictions and limitations; if he be allowed that degree of liberty and power which the head of such a school ought to have accorded to him, in order to enable him to work with the greatest efficiency and success; and if, on the other hand, he be favored with the requisite support and co-operation of the Committee in his plans and efforts, it seems more than probable that under his care and direction this institution will, in its new sphere, and with its unsurpassed accommodations and appliances, and its accomplished corps of assistant and special teachers, become even more useful and more highly valued than it has been at any previous period. In saying this, I do not mean to undervalue, in the slightest degree, the services of the able men who have, under less favorable circumstances, in former years, had its management in their hands.

During the past year complaints have been made by advocates of a higher education for women, that the sexes were not provided with equal educational advantages, as there was no public classical school for girls, corresponding to the Latin School. If there is a demand for the instruction of girls in Latin and Greek, not only to the extent now afforded by the Latin School course, but even beyond it, I trust that ample provision will be made for such instruction in the Girls' High School. It may be found expedient also to make provision for the admission of students who desire to take a partial course, no pupils being permitted, however, to take such a course who are not qualified to pass the entrance examination. Other modifications of the programme of studies will probably be found desirable, in order fully to adapt the school to the demands of this community at the present time, for higher female education. For several years, instruction in a one year's course has been provided for in an advanced class of such graduates as wished to continue their studies. As boys are allowed to pursue a classical course of six years in the Latin School, girls should be permitted, if they desire it, to pursue a similar course for the same length of time.

ROXBURY HIGH SCHOOL.

The average whole number of pupils belonging during the last half-year was 194 — boys 91, girls 103 — against 181 for the corresponding six months of the preceding year; the average attendance was 183, and the per cent. of attendance 94. These pupils were taught by one head-master and five female teachers, three ranking as assistants and one as head-assistant. Besides these, four special teachers were employed, namely, one each in drawing, in music, in the French language and in the German language. At the close of the year graduating diplomas were awarded to a class of 42, — 14 boys and 28 girls.

In former reports I described the peculiarities and good traits of this excellent school. There is nothing to add now as to its management and instruction, except to say that it maintains its high rank as a vigorous, thorough and successful school. Its rapid growth within a few years is a sufficient proof of the high appreciation in which it is held by the inhabitants of the Highlands. Its growth has been such that its building, although an excellent and commodious structure, is now quite inadequate to its wants. An admirable and economical plan for its enlargement has been devised, and it is hoped that the City Council will immediately take the necessary measures to authorize the contracts for it to be made.

The following table shows the number and average age of the pupils admitted to the Roxbury High School, from Grammar Schools, and from other sources, and also the number of those who joined the school and entered upon the course of study, in the fall of 1872: —

SCHOOLS.	Admitted.		Joined.		Average Age.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Bigelow	1	..	1	..	13.6	....
Comins	18	8	16	6	15.1	15.5
Dearborn	13	10	9	6	15.9	16.8
Dudley	..	9	..	6	....	15.1
Dwight	2	..	1	..	14.3	....
Sherwin	4	3	3	2	14.10	....
Lewis	12	14	8	10	15.10	15.0
Washington	8	..	5	..	15.7	....
Other sources	2	8	2	7	13.8	15.3
Totals	60	52	45	37	14.10	15.6

Of those who joined the school, there were, —
Between thirteen and fourteen, eight.
Between fourteen and fifteen, twenty-seven.
Between fifteen and sixteen, twenty-seven.
Between sixteen and seventeen, fifteen.
Between seventeen and eighteen, five.

DORCHESTER HIGH SCHOOL.

The average whole number belonging for the last half-year was 123 — boys 53, and girls 70 — against 119 for the corresponding six months of the preceding year; the average attendance was 108, and the per cent. of attendance was 89. These pupils were taught by one head-master and four female teachers, three ranking as assistants, and one as head-assistant.

At the close of the school year graduating diplomas were awarded to a large class consisting of 14 boys and 29 girls, 43 in all.

This is a thoroughly equipped school, with accommodations of the highest order, and a faithful and able corps of instructors. Its course of study is broad and liberal, comprising a Classical department, where young men can fit for college, and an English department, affording a thorough practical education. The inhabitants of Ward Sixteen are fortunate in having such a school open to all their sons and daughters who desire to go beyond the elementary course of education.

The following table shows the number and average age of the pupils admitted to the Dorchester High School, from Grammar Schools and other sources, and also the number who joined the school and entered upon the course of study in the fall of 1872 : —

SCHOOLS.	Admitted.		Joined.		Average Age.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Mather	1	3	1	3	13.2	15.6
Harris	6	10	6	10	14.7	15.3
Everett	5	2	4	2	14.11	13.10
Stoughton	4	8	2	5	15.2	15.2
Gibson	..	..	..	..	....	....
Tileston	2	2	1	1	14.6	14.8
Minot	2	1	1	1	16.10	13.9
Other sources	5	1	5	1	15.3	16.6
Totals	25	27	20	22	14.11	14.11½

Of those who joined the school there were, —
Between twelve and thirteen, one.
Between thirteen and fourteen, six.
Between fourteen and fifteen, twelve.
Between fifteen and sixteen, seventeen.
Between sixteen and seventeen, five.
Between seventeen and eighteen, two.

NORMAL SCHOOL.

The action of the Board, by which this school was established, has been already referred to in speaking of the Girls' High School. It is intended that this shall be in reality, as well as in name, a *Normal* School, that is, a school especially designed for the *professional* training of teachers, and for nothing else, it being no part of its purpose to give that instruction which belongs exclusively to general and liberal education. Its studies will be limited strictly to those which are pedagogical, those which relate to the science and art of education. Its programme will of course comprise mental and moral science, physiology and logic, a knowledge of which studies is essential to the well-equipped teacher. It will also include the study of the best methods of organizing, managing, teaching and governing schools, of different grades. Ample provision will no doubt be made, and at an early day it is be hoped, for the observation and practice of the pupils in model or training schools, comprising all the grades of study in our whole course of elementary education.

With our experience of twenty years in different organizations for normal training, we ought to be able, in a comparatively short time, to develop this school into a model institution of its class. Fortunately it begins its career with the most important element of success already assured, in a most capable and experienced teaching corps, comprising the ladies who have done so much valuable work under the direction of Miss Stickney, in the Training Department of the Girls' High and Normal School, and the recently elected head-master, Larkin Dunton, Esq., late master of the Lawrence Grammar School, a gentleman pre-eminently fitted for such a post. He is a sound practical educator, and I feel well assured that under his direction and instruction, aided as he will be by able assistants, this school will send out well-trained and capable teachers.

HIGH SCHOOL QUESTIONS.

The questions used at the examination for admission to the High Schools except the Latin School, in July, were as follows: —

Arithmetic.

1. $\frac{1}{6}$ of my property is in land, $\frac{1}{5}$ is in stocks, and the remainder is $380. What is the amount of my property?

2. The difference of two numbers is $15\frac{3}{5}$, the smaller is $12\frac{2}{11}$; what is the greater?

3. What is the least common multiple of 14, 20, 24?

4. How many square yards of carpeting will be required to cover a floor 32 feet long and 23 feet wide?

5. Add $\frac{2}{3}$, $\frac{5}{9}$, and $\frac{2}{13}$.

6. Divide $\frac{13}{17}$ by $\frac{2}{9}$, and explain the operation.

7. Find the greatest common divisor of 304 and 232.

8. A man owning $\frac{2}{3}$ of a ship sold $\frac{1}{2}$ of his share for $5,425. What was the value of the ship at that rate?

9. Reduce £421875 to shillings, pence, and farthings.

10. What is the interest of $325, from Jan'y 1, 1870, to June 23, 1872, at 7 per cent.?

11. What is the compound interest of $232, for 4 years, at 6 per cent.?

12. If a pole 15 feet long cast a shadow 20 feet long, how high is a steeple that casts a shadow of 270 feet at the same time?

13. Having sold 5,000 lbs. of tea, at 30 cts. per lb., what is my commission at 2 per cent., and how much money shall I remit to my employer?

14. A horse and chaise are together worth $1,000, but the horse is worth only $\frac{9}{16}$ as much as the chaise. What is the value of each?

15. Divide £25 13s. 2d. equally among four men.

16. What is one-fourth per cent. of $225?

17. My commission at $\frac{1}{4}$ per cent. for investing a certain sum of money was $10. What was the sum invested?

18. How many pints in $\frac{1}{2}$ gal., $\frac{1}{3}$ qt., and $\frac{3}{8}$ pt.?

19. Divide 212.0565 by 24.125.

20. What is the present worth of $100.54, due 3 years hence, at 6 per cent.?

Grammar.

1. Into what parts is English Grammar divided?

2. Name the parts of speech.

3. Decline: boy, I, who, he.

4. Write the plurals of the following words: enemy, valley, German, Frenchman, sheaf.

5. What is gender? Give the opposite gender of the following words: window, author, abbot, landlord.

6. Correct: If there is anybody there let them answer.

7. What is comparison? To what parts of speech does it belong?

8. Compare the following words: pretty, soon, good, little.

9. Write the principal parts of the following words: ride, be, go, become.

10. What is an auxiliary verb? Name four auxiliary verbs.

11. Write the present, active, and passive participles of the word *move*.

12. Correct: If I was her. He laid down upon the sofa. He has lain the book upon the table. She set in her seat.

13. Parse the nouns in the following: John's hat lies on my table.

14. My sister gave me what I wanted. Parse *what*.

15. Write three sentences showing the word *that* used, 1, as interrogative pronoun; 2, as a relative pronoun; 3, as connective.

16. Define Analysis.

17. Write a sentence containing a simple subject and a simple predicate.

18. Write a sentence containing an adverbial phrase and an objective clause.

19. Analyze the following: —

> "A tender bud,
> That tried to blossom in the snow,
> Lies without where the violets blow."

20. Parse the words in italics: —

> "*Lives* of great men all remind us,
> We *can make* our lives *sublime*;
> And, *departing*, leave behind us
> *Footprints* on the sands of Time."

Geography.

1. Boston is about 71° E. longitude, and Philadelphia 75° E. longitude; what is the difference in time?

2. The difference in time between London and New Orleans is six hours; what is the difference of longitude?

3. What is the width in degrees of each of the Temperate Zones?

4. What is the area, and what the population of the United States?

5. In what latitude and longitude are the antipodes of Boston?

6. When the sun has just crossed the Equator in March, will it be day or night at the North Pole, and how long will this day or night continue?

7. A vessel is in 23° S. latitude, and 112° E. longitude; in what ocean, and near what land is she?

8. What is the size of the State of New York as compared with Massachusetts?

9. A vessel sails from Boston to Rio Janeiro; what will probably be her return cargo?

10. A vessel carries goods from Boston to New Orleans, and is there hired to carry a cargo to Liverpool; what is probably that cargo?

11. What difference between the industrial pursuits of the inhabitants of Rhode Island and Virginia?

12. What are the chief agricultural products of the Gulf States? of the North Western States? of Southern Russia? of China? of New England?

13. Through what State does the Missouri river flow, and of what State does it form the Eastern boundary?

14. Name the largest of the West India Islands; to whom does it belong, and what is its chief city?

15. Name the greatest commercial city in Europe; of the United States.

16. What large city of Europe is nearly in the latitude of Boston?

17. A vessel is to sail directly from Lake Michigan to London; over what waters will she sail?

18. Name the three longest rivers on the globe.

19. Name the three largest cities in the United States, in the order of their size.

20. Draw a map of the State of Pennsylvania.

History.

1. Name three of the earliest known discoveries of land in the New World, and state by whom made.

2. Give very brief history of the Plymouth Colony.

3. Give very brief history of the Virginia Colony.

4. In what Colonies did religious toleration exist?

5. State principal causes of the American Revolution.

6. Name five of the principal leaders of the American Revolution.

7. What is meant by the Monroe doctrine?

8. When was the present Constitution adopted, and why?

9. Name three victories important to the Americans.

10. Who were our Allies?

11. What was the Missouri Compromise?

12. Name the acquisitions of territory made by the United States, both by conquest and purchase.

13. Name some of the important events of General Jackson's administration.

14. Why did several of the States secede in 1861? Give briefly the results of their secession.

15. For what purposes have the public lands been granted?

16. What is meant by a protective tariff?

17. What Presidents have served two terms?

18. Of what officers does the Cabinet consist?

19. State what you know about the "Treaty of Washington," why it was made, and success of it thus far.

20. What are the important political questions of the day?

SPECIAL SCHOOLS.

During the last year there have been in operation seventeen special schools, namely, two Evening Drawing Schools, one Evening High School, ten Elementary Evening Schools, two Schools for Licensed Minors, one for Deaf-Mutes, and one Kindergarten School. The whole number of teachers employed in these schools was 101, and their salaries amounted to $26,526.34.

EVENING DRAWING SCHOOLS.

Year before last, all the instruction in industrial drawing, in accordance with the requirements of the recent statute relating to art-education, was given at rooms in the Institute of Technology, rented for the purpose by the city. Although ten instructors were employed to teach here in several departments of drawing, the whole organization was designated as only one school. Last winter, the subjects of instruction being divided into two general classes, namely, free-hand and mechanical, two separate schools were carried on, each being devoted to one of these classes of subjects. The Free-hand school was accommodated in the Normal Art School rooms at the Appleton street building, and the School in Mechanical Drawing in rooms at the Institute of Technology. The Free-hand School was taught by a principal and three assistants; 322 students were registered, but the greatest number considered as belonging was 170; the average attendance was 65; males 51, and females 14, the maximum attendance being 91, and the minimum 23. The pupils were taught in three classes, working from outline blackboard drawings, from flat examples, and from casts.

The School in Mechanical Drawing, at the Institute of Technology, was taught by six instructors, and the attendance was upward of two hundred, all males. It was divided into four departments, one for ship-drafting, one for geometrical drawing, one in architecture, and one in machine drawing. The greater part of the students in this school were young men engaged in some branch of industrial labor requiring skill in drawing for its most successful pursuit. In both schools the teachers were thoroughly devoted to their work, and the students were earnest, industrious, and most commendable in deportment. Besides the free instruction in drawing, given in the above-named Evening Schools, a class in drawing was provided for at the Evening High School, where elementary geometrical drawing was taught as a preparation for the classes at the Institute of Technology. Average attendance, 24. Late in the season a free-hand class was commenced, which had an average attendance of 16. Both classes made satisfactory progress.

At the close of the Evening Drawing Schools, on the 6th and 7th of May, they were systematically and carefully reviewed by the Supervisor, Mr. Walter Smith, the regular teachers neither participating nor being present. The results in detail have been printed in the report of the Committee on Drawing.

EVENING HIGH SCHOOL.

This most interesting and useful institution has from its commencement constantly increased in numbers and efficiency. Last winter it was under the charge, as principal, of Mr. Luther W. Anderson, the senior master in the English High School, whose long experience and eminent practical ability rendered him an eminently fit person for the management of such a school. He was assisted by eight competent teachers, all of whom devoted themselves to their work with zeal and fidelity. The average attendance was 225, against 150 for the preceding year, showing a gratifying increase. The number connected with the school varied from 375 to 524.

The studies pursued were as follows: navigation and surveying, arithmetic, English Grammar, English literature, geometry, algebra, the French and German languages, geometrical and free-hand drawing, book-keeping, natural philosophy, penmanship, and the Latin language.

The following table shows the statistics of the Evening High School during the last year: —

1871-72.	No. of Sessions.	Av'age No. Belonging.	Average Attendance.			Av. No. of teachers.	Av. No. of pupils to a teacher.
			Males.	Females.	Total.		
October, 1871..	22	398	152	107	259	7	34
November, 1871..	21	524	138	108	246	8	28
December, 1871..	20	481	137	85	222	8	24
January, 1872..	23	463	129	86	215	8	23
February, 1872..	20	452	127	81	208	8	23
March, 1872..	14	375	110	62	172	8	21
Totals	120	2,693	793	529	1,322	47	153
Averages		449	132	88	220	8	25.5

It appears that the average number of pupils to a teacher, including the principal, was upwards of 25; exclusive of the principal it was upwards of 30. By judiciously managing the classification, and thus giving a fair number of pupils to each teacher, the cost of carrying on the school has been kept within very reasonable limits. The progress which this school has made since it was instituted, three years ago, is extremely gratifying. The experiment has demonstrated, beyond a doubt, the utility and need of such a school. If there is any class of persons for whom the city can afford to furnish free education, it is that class of industrious young men and women who have neither the time nor means to attend a day school, but whose desire for improvement is so strong as to induce them to devote their evenings to the acquisition of knowledge.

With what consistency or reason could we expend so many thousands on our day High Schools, and withhold the pittance required for the support of the Evening High School? I know of no sound argument for the maintenance of our day High Schools which will not hold equally good for the maintenance of our Evening High School. But I believe there is no need of looking for arguments to convince the members of the Board of the expediency of sustaining this school by their votes and their influence.

There was some opposition to it during the first and second years of its existence; but it has gradually disappeared as its character and objects have become better known.

The leading purpose of this school is to impart technical instruction, that is, such instruction as is applicable to the practical pursuits of life. Bookkeeping, navigation, surveying, and practical geometry are some of the strictly technical branches taught. But it very properly opens its doors also to those pupils who desire to pursue studies which are usually classed with those which have general culture for their object. For a detailed account of the manner in which the school has been conducted during the last year, I beg to refer to the excellent report of the able principal, which has been printed in the report of the Committee on Evening Schools. This committee justly say that "the school is a great credit to the city."

ELEMENTARY EVENING SCHOOLS.

The following table contains the summary of the statistical reports of the several Elementary Evening Schools, which were in operation from October, 1871, to April, 1872: —

SCHOOLS.	No. of Sessions.	Whole No. Registered.	Average No. Belonging.	Average Attendance.			Average No. of Teach's incl'd-ing Principal.	Av'age No. Pupils to a Teacher.
				Males.	Females.	Totals.		
North Bennet street	114	500	134	79	. .	79	6.8	13
Chambers Street Chapel	106	405	216	64	35	99	9.1	12
Anderson street	117	443	211	94	37	131	10.3	14
Warrenton Street Chapel	75	329	189	48	40	88	7.0	12
Harrison avenue	116	569	311	79	52	131	12.0	12
South Boston	117	269	116	86	. .	86	8.8	11
Roxbury, Cabot street	118	532	124	56	17	73	8.1	10
Old Franklin School	120	375	137	74	36	110	10.0	11
Reed's Hall, East Boston	114	383	150	77	13	90	9.6	12
48 Richmond street	50	196	35	30	3	33	1.6	23
Totals	1,047	4,001	1,623	687	233	920	83.3	11

The average nightly attendance was 920, against 887 for the preceding year. The branches taught in these schools are reading, spelling, writing, arithmetic, and geography. In the new school at East Boston there was an excellent class in book-keeping.

These schools are doing much good, and they are to be, no doubt, a permanent department of our system of public instruction. Experience will probably suggest improvements in their management and instruction. What seems to be especially needed to render them more efficient is a better classification. The great obstacle to this desirable improvement, at present, is the want of more suitable accommodations. So long as they are conducted as they now are, in large halls, with numerous classes, grouped around tables, a proper classification for class instruction is extremely difficult, if not impracticable. Hence the instruction is necessarily almost exclusively individual, and consequently much more costly than that of the day schools. If each teacher could have a separate room, the pupils might be at once classified so as to enable the teachers to instruct at least twice the number now assigned them, with at least as good results as are now produced. The very fact that the pupils are not now held to class instruction, but are mainly taught individually, accounts to some extent for the irregularity of attendance, which is one of the principal evils with which the teachers of these schools have to contend. It seems to me also that the success of these schools would be promoted by abolishing the regulation which prohibits the employment in them of teachers of day schools, so as to leave the Committee on the Evening Schools to exercise their own judgment in the matter. The principals, at least, might be with advantage taken from among the teachers of the Grammar Schools.

SCHOOLS FOR LICENSED MINORS.

The average number belonging during the last half-year was 60, and the average attendance 51. It appears that the average attendance is less than half as large as it was during the corresponding six months of the preceding year. The teachers are the same, and they are competent and faithful, but the attendance has fallen to so low a figure as to suggest the expediency of discontinuing one of the schools.

These schools were designed especially for licensed newsboys and bootblacks, the former attending for a session of two hours in the morning, and the latter for a session of the same length in the afternoon. The rule is that boys are not to be licensed unless they promise to attend school, and that after receiving a license, if they absent themselves from school, their licenses shall be revoked. The carrying out of this rule belongs to the truant officers, in co-operation with the police. The bootblacks still continue to attend much more than the newsboys. I believe the effect of this plan has been to cause more of the newsboys to attend the Grammar and Primary Schools, for they are not excluded from any schools for which they are qualified. At any rate, it is quite obvious to even the casual observer, that since this plan was adopted, a very great improvement has taken place among the classes of boys which it was designed to effect.

SCHOOL FOR DEAF-MUTES.

The whole number of pupils who were in attendance during the last six months was 44, and the average attendance was 31.

This school has been carried on during the past year with a high degree of efficiency and success. Its teachers deserve great credit for their earnestness, zeal, and patience in advancing the progress of the pupils committed to their care. The accomplished principal is extremely well qualified, both by her temperament and her education, for the difficult situation which she occupies. She exhibits the spirit of what I call the true teacher, the teacher who is bound to attain, not apparent success, but real success, — the spirit of candid and thorough study to find out right ways of doing things, — not merely good ways, but the *best* ways. Her strong practical common sense enables her readily to discriminate between what is merely fanciful and captivating, and what is useful for the accomplishment of the object in view. Her enthusiasm is controlled by reason. Her assistants seem to be equally well suited to their sphere.

The use of Prof. Bell's system of visible speech as a means of instruction, during the past year, has justified the opinion of its utility as an instrumentality in the instruction of deaf-mutes, which was expressed by me in a former report. I am highly gratified to learn that Prof. A. Graham Bell, a gentleman of the highest respectability, and of the rarest ability as a teacher, has opened a Normal Training School in this city, for the purpose of qualifying teachers for the application of visible speech to deaf-mute instruction. It would be a decided advantage to all teachers of speaking children to possess some acquaintance with the new science — the true science of vocal utterance.

THE KINDERGARTEN SCHOOL.

This school numbered, during the last half-year, eighteen pupils, and the average attendance was fourteen. This school has been in operation two years. It was set up as an experiment, to see what could be done here in Boston with a school conducted on Froebel's plan, as a part of a public system of free education. When the school was opened, it was the first, so far as was known, public free Kindergarten in the world. Froebel's system of training young children, as he developed and expounded it, has been endorsed and commended by good educational authorities. Froebel was no doubt an original educator, and as such he is well worth studying, but when the advocates of his system insist that the Kindergarten must be exactly what he prescribed and nothing else, that there must be no departure from his precise pattern and type, no modification whatever of the programme which he laid down, they claim, it seems to me, rather too much. Education is a progressive science, and it is hardly safe to assume that perfection has been reached in any of its departments. Besides, the spirit and principles of a system may be substantially retained and applied, although the forms of organization, and the material appliances and means may undergo various modifications.

The question has been asked why it is that the Kindergarten, with all its acknowledged merits, makes so slow progress here in a community where there are so many enlightened friends of education, and where so much is doing in various ways to advance the cause of education. I do not pretend to be able to give an answer to this question which will be satisfactory to everybody. But to my own mind, one obvious reason for this is to be found in the very fact that our Primary Schools, as now conducted, already do so much of the work which Froebel aimed to do in his children's garden. If any one will go into our lowest Primary class, he will find very much of the spirit of Froebel's system. I have read in the newspapers communications, apparently written by ardent and well-meaning advocates of the Kindergarten system, caricaturing our Primary Schools, in order perhaps to make the need of their favorite system appear the more urgent. This mode of advocacy does not seem to me to be wise. Persons who have not examined our Primary Schools for a score of years have but a very inadequate idea of what they now are. They are not without imperfections. But would Kindergartens necessarily be perfect?

My view of this matter has been so much misunderstood, that I feel it necessary to define my position. I think highly of Froebel's system as *I* understand it. I do not accept it as a perfect invention, as an educational finality, as an institution which must accept no variation or modification, that must be copied entire or not at all. Still, I think so well of it that I feel justified in advising and recommending its fair and full trial. I should like to see three or four model Kindergartens set up in different localities, so as to take in pupils from varied conditions in society. I should like to study their operations and results. After such an experiment, and only thus, should I be prepared to give an opinion as to the next step to be taken in regard to the system.

SEWING.

The following are the provisions of the regulations respecting sewing: —

"Plain sewing may be introduced into any Primary School, if the sub-committee think it advisable.

"Instruction shall be given in sewing, to the fourth, fifth, and sixth classes in the Grammar Schools for girls, provided that not more than *six divisions* be taught in any one school. The district committee of each school in which such instructions is given shall nominate to the Board, for confirmation, some qualified person as teacher of sewing, who shall give to each pupil two lessons a week, of not less than one hour each, on different days or sessions of the school."

The salary of sewing teachers is $87 for each division taught.

Sewing has not been introduced into our Primary Schools, and it seems hardly desirable that it should be, as practically all the Primary pupils go forward into the Grammar Schools, where they can be taught needle-work more systematically and efficiently.

Three of the Grammar Schools entitled to instruction in sewing, the Chapman, Prescott, and Adams, did not report any sewing teacher.

By the word "division," in the regulation cited above, is meant the portion of a class taught in a separate room by a separate teacher. The average number of pupils to a division is about 47. It appears, then, that instruction in sewing is limited to six such divisions, or a maximum of about 282 pupils in each school. This limitation works unequally. While in some of the smaller schools it permits instruction in sewing to be given to all the pupils of the three lower classes, in some of the larger schools it cuts off not only the whole of the third class, but a part, if not the whole, of the fifth.

Considering the utility and importance of sewing and cutting-out, as a branch of female education, I hope that provision will be made for its efficient instruction, not only in all the divisions of the three lower classes, but also, to some extent at least, in the three upper classes.

The following table shows the average number of girls belonging to each Grammar School, the number of divisions in which sewing is taught, the number of pupils in those divisions, and the salary of each sewing teacher: —

SCHOOLS.	Av. No. of girls belonging during the past yr.	No. of divisions in which sewing is taught	No. of girls taught sewing (about)	Amount of salaries for the year.
Adams	195			
Bowditch	525	6	282	$525 00
Bowdoin	503	5	235	437 50
Boylston	206	3	141	262 50
Chapman	269			
Comins	398	6	282	525 00
Dearborn	362	5	235	437 50
Dorchester	549			800 00
Dudley	264	4	188	350 00
Everett	682	6	282	525 00
Franklin	637	4	188	350 00
Hancock	874	6	282	525 00
Lewis	268	3	141	262 00
Lincoln	317	4	188	350 00
Lyman	169	2	94	175 00
Norcross	691	4	188	350 00
Prescott	285			
Sherwin	354	6	282	525 00
Shurtleff	663	8	376	700 00
Wells	448	6	282	525 00
Winthrop	759	6	282	525 00
Totals	9,418	84	3,948	$8,150 00

During the last two or three years considerable progress has been made in the instruction in sewing in our Public Schools. A new interest has been awakened in regard to it both among teachers and pupils. Whenever I ask the classes of girls who are employed with their needles if they like their sewing lessons, I always get an emphatic answer in the affirmative. The teachers seem anxious to systematize and improve their plans of instruction, and to carry forward their pupils to higher grades of work than they formerly attempted. Last May I invited the sewing teachers to meet me at the City Hall, for the purpose of consulting in regard to the best means of promoting improvement in the instruction in this branch. This invitation was cordially accepted, and the result was an interesting and useful meeting. A committee was appointed to prepare a graded programme of work to be done, and it was unanimously agreed that it was desirable that there should be an annual exhibition of the needle-work of the pupils in each school where sewing is taught, at the time of the usual annual exhibitions of those schools. It was also suggested that it would be well for each teacher to send to the Superintendent an annual report of the work done by her pupils. Several teachers gave some account of their plans and arrangements. It became apparent, from the remarks made, that there was not much uniformity of plans or aims among the teachers, and that scarcely any one of them knew what was done by other teachers. But all manifested a lively interest in their work, and were extremely anxious to avail themselves of all practical means for improvement. Probably one of the best things they could do would be to visit each other's schools.

In accordance with the suggestions made at the meeting, in several schools, very creditable exhibitions of sewing were held, and carefully prepared reports of work done have been received from about half of the teachers, of which the following is a specimen: —

Dearborn School Sewing Report for the year ending July, 1872. *Five Divisions.*

Aprons,	80	Pillow-slips	40
Napkins,	41	Night-dresses,	3
Patchwork, squares,	2,137	Table-cloths,	3
Hemming, yards,	653	Hats trimmed,	1
Towels,	148	Curtains,	3
Handkerchiefs,	270	Drawers, pairs,	9
Skirts,	27	Bibs,	8
Bags,	117	Veil,	1
Sleeves,	144	Stitching, yards,	21
Pockets,	12	Dusters,	6
Button-holes,	444	Pen-wipers,	25
Tidies,	4	Holders,	6
Scarfs,	15	Bolster-case,	1
Waists,	12	Needle-books,	4
Shirts,	2	Dolls' Dresses,	21
Chemises,	7		
Quilt,	1	Total,	4,268
Sheets,	2		

It has seemed to me that it might be well for the School Board to appoint a competent Committee of ladies to examine the instruction in sewing in our schools, and make a report upon it; and it gives me pleasure to inform the Board that in a quiet and informal way an inspection was actually made, during the last summer, of the sewing in six schools, by a Committee of the Women's Education Society. I have been kindly furnished with a copy of their report, in writing, from which I make the following quotations:—

"The knowledge gained is perhaps not great, but it will be valuable as a basis on which further improvement may rest. We have found sewing well taught in the fifth and sixth classes of our Grammar Schools, and in one visited (the Wells), in the lowest division of the fourth also.

"The greatest difficulty at present is to supply work for the children who bring none, and this can be done, at very small expense, by providing strips of cotton cloth a quarter of a yard in width and three times that length, that can be made to answer the purpose of patchwork, handkerchief, or apron, etc., in so far as knowledge of stitches put into them goes; top-sewing, hemming, felling, stitching and button-holes, patching and marking can all be done on such a strip, as specimen work, and this sort of work will have a twofold effect: it will supply the child with material, and teach her plain sewing; but it will be dull in comparison with the apron or handkerchief her neighbor is making, and will, perhaps, induce her to bring her own work for the next lesson."

"Increased attention to mending would be very desirable; it is difficult to obtain; for a garment patched, or a stocking darned, does not swell the list that makes up the report, and so does not add to the reputation of the class. The only inducement to this sort of work would be an exhibition of needle-work, which should include only the very best work of each kind. It might be classified somewhat as follows for children from six to twelve years: under seven, the best top-sewing; under nine, hemming and felled seam; under ten, stitching; under twelve, the best button-holes, the best entire specimen, the best mended stocking, the best sampler, and the best knit stocking. No fancy work should be allowed; but the knitting of stockings should be encouraged, and the marking of linen with thread, as more durable and economical, and easier than with ink."

"In conclusion, we feel greatly encouraged to find the children so well taught, the teachers so much interested, and so convinced of the importance of the instruction, the Superintendent so favorable to the extension of sewing to all the classes, as is recommended in the excellent report of Dr. Lothrop (as Chairman of the Special Committee on Industrial Schools), and while we are waiting for the School Committee to act upon the orders annexed to the report, we shall be thankful to have sewing, mending and knitting thoroughly taught in the three lower classes of the Grammar Schools, to have the children supplied with specimen work, and to obtain permission for a yearly exhibition of sewing, as this will insure a superior quality of work, very difficult to obtain without some prospect of reward, the object now being on the part of the child to finish a garment as quickly as possible, in order to have the benefit of it; and, on the part of the teacher, to report as many garments as possible made in her classes, for the sake of her own reputation as a skilful and competent needle-woman."

By "yearly exhibition," the Committee mean a *general* exhibition, somewhat like that of drawing, in addition to the exhibitions in the several schools. This plan as well as the other suggestions, presented in the above quotations, appear to be judicious, and I hope they will receive careful attention.

DRAWING.

During the last year great progress was made in this branch, both in the Evening Industrial Drawing

Schools and in the day schools of all grades from the lowest Primary classes to the highest classes of the High Schools. For many years we had been trying in a moderate way to teach drawing in our public schools. Fifteen or sixteen years ago, in order to improve the instruction in this branch, I procured from England at my own expense a set of copies and models, for which the School Committee refused to pay. The models nobody that I could find knew how to use, and they were given to a Primary School to be used in object lessons. From the copies, by the kind assistance of Mr. Bartholomew, who was employed to teach drawing a few hours a week in the Girls' High and Normal School, I prepared the Boston Primary Drawing Tablets and Slates for Primary Schools; and although I was to receive no pecuniary benefit therefrom, their introduction was strenuously opposed by some members of the Board of high social and literary standing. I mention this curious fact to show how little the true scope and utility of drawing as a branch of common school education was known by those who might be supposed to have the best understanding of the matter. Their reasoning was this: "Drawing is a fine art, an accomplishment, an educational luxury for the wealthy classes; the public schools are for the children of the poorer classes, who must work for a living. What have they to do with making pictures? Let them stick to the three R's." When we consider that it was scarcely twelve years from that time that the Legislature enacted a law requiring drawing to be taught in all schools, on the ground that it is the true fundamental element of all *industrial education*, we cannot but feel that the world does move.

When Mr. Bartholomew brought out his drawing books, we were enabled to take a new step forward in the right direction, but it was not a very long step. There was no great interest in the subject, nor were its nature and objects clearly understood and appreciated. Drawing was taught in the High Schools, except the Latin, by special teachers, and it was required to be taught in all the lower grades. But what was done was uphill work. In the mean time we were greatly occupied with other reforms and improvements, more fundamental and more important still. At length the time came for vigorous measures for perfecting the instruction of drawing in all our schools. For this purpose *new instrumentalities* were needed. The first of all was a Standing Committee of the Board to give special attention to its development. Such a Committee was instituted, and it went to work in earnest. The Evening Industrial Drawing Schools were established as required by law. The schools were examined in drawing; an exhibition of drawing was ordered. But still another instrumentality was necessary to carry forward the work. A thoroughly accomplished *art-master* was wanted to be the director and supervisor of this branch, a man thoroughly trained and thoroughly experienced in all branches of art education. After long negotiations, such a man was at last secured in Mr. Walter Smith, of England, one of the very ablest graduates of the Normal Art Training School at South Kensington, who had for many years successfully conducted art schools, — a man of broad art-culture, of extensive knowledge of the methods and systems of different countries, of practical skill in teaching, of tact in the handling of classes, of organizing power, of executive ability, of business capacity, of immense working force, and of a noble professional ambition. This is the sort of a man the Committee on Drawing had the good fortune to secure. This was an immense step in the right direction. It is easy to make regulations, but the essential and difficult thing is to get the right men and set them to work. From the arrival of Mr. Smith, last October, a new epoch began. In saying this, I would not abate the tithe of a hair from the credit due to other faithful workers who preceded him, and who are so efficiently and earnestly co-operating with him. The Normal Art School, in Appleton street, for the instruction of teachers, was at once opened, the beneficial effects of which were immediately visible in the improved methods and aims in teaching drawing in all our schools. Our teachers deserve great credit for their hearty co-operation in developing this branch of instruction. It was natural that there should be some grumbling, for there are always some who are averse to any extra exertion or any interruption to established routine. But the exhibition of drawing last May seemed to give great satisfaction, and put everybody in better humor. The glory, however, of last year's labors and efforts was seen in June, at the Girls' High and Normal School building, when *five hundred of the teachers* of our Primary, Grammar and High Schools, voluntarily presented themselves for an examination of their qualifications for teaching drawing; for the success of the whole scheme depends upon the competency of the mass of the teachers to teach this branch to their classes, aided and assisted by competent supervisors.

The general plan of carrying on the teachings is the same as that which has been so triumphantly successful in our musical instruction. A general supervisor at the head, to plan and direct, with a corps of four or five assistants, to teach personally in the highest classes of the High Schools, and to aid in teaching the teachers and in inspecting, examining, and supervising the work done in all the lower grades of the schools, the Committee on Drawing, of course, being the power over all. As to the details respecting the examinations, programmes and expenses, the Report of the Committee furnishes all needed information.

The path is now clear and plain, in the main. Just now there may be some teachers who do not fully see how to carry out the programmes which have been made. But this is only a temporary difficulty, and it will no doubt soon be overcome. If modifications in the requirements are found by experience to be necessary they will be made. Only a little patience is wanting. Extra pressure was inevitable in the introduction of so great an improvement. For the time drawing may seem to some to engross too much attention and time. But this is only a temporary phase of the matter. For one I have no fear that our scholars will be the losers. *When drawing is properly understood and properly taught, it will be acknowledged by every enlightened mind to be an indispensable element in the education of every human being,* *whatever may be his destination in life.* Here general education and technical education coincide. The child needs drawing equally whether he is destined for a course of liberal culture, or for any industrial pursuit.

ATTENDANCE.

As to the importance of keeping this subject prominently in view in the administration of school systems, there is no dispute. What is the whole number of children of school age? What is the whole number enrolled? What is the average number belonging, and how does it compare with the daily attendance? What are the ages of the pupils in attendance? What is the average period of attendance? What percentage of the pupils complete the course? What is the number of pupils who attend one year, two years, etc.? Answers to such questions as these in respect to a school system are necessary to a full and complete estimate of its efficiency and success. In my last report I gave as full information in relation to our school attendance as the statistics in my possession would allow. Since that report was submitted, I have obtained two items of some importance relating to this matter.

The first is *the whole number of* DIFFERENT *pupils enrolled* in all the schools during the last school year. As this is the first time we have attempted to obtain the number of different pupils enrolled in a given period, it is possible that there may have been some errors committed in the enumeration; but the result arrived at is believed to be substantially correct. In order to get the true number, the teachers were instructed to begin on the first day of the school year with the roll of pupils known to actually belong to the school on that day. Additions to those rolls, for the purpose in view, were to be made only of the names of pupils subsequently admitted *who had not attended any Boston public school since the first day of the school year.* These rolls would give the total enrolment of different pupils.

The following is a summary of the total enrolment of different pupils in the public schools, for the school year 1871–72 : —

SCHOOLS.	Boys.	Girls.	Total.
High Schools	954	883	1,837
Grammar Schools	10,973	10,752	21,725
Primary Schools	11,030	9,283	20,313
Licensed Minors	103	....	103
Kindergarten	19	26	45
Deaf Mute School	22	29	51
Totals	23,101	20,973	44,074

In the above table it will be observed that the enrolment in the Grammar Schools does not much exceed the average whole number belonging, as reported in the tables of statistics. This is due to the fact that the four thousand two hundred and seventy pupils promoted from the Primary to the Grammar Schools were not counted in the number enrolled in the latter schools, as they had already been previously enrolled in the Primary Schools within the year. On the other hand, the enrolment in the Primary Schools largely exceeds the average whole number belonging. The reason for this is found in the fact that these schools, during the year, receive upwards of four thousand new pupils, who enter school for the first time, and transfer about the same number to the Grammar Schools. This number, added to the average belonging, makes a sum reasonably near in amount to the enrolment in these schools.

The other item above referred to is the result of an enumeration of *the children residing in Boston, between five and fifteen years of age, who are employed in stores and industrial establishments*, and not attending school. This enumeration was made with great care, at my request, by the truant officers, each canvassing his own truant district. They found the employers very ready to give them the information desired. They deserve thanks for their readiness to undertake this service, and for the thoroughness with which it was performed. The smallness of the number of children found employed surprised me; but I have no reason to believe that the enumeration was not substantially correct.

The following table shows the number of children residing in Boston, between five and fifteen years of age, employed in stores and industrial establishments, June 1872: —

TRUANT DISTRICTS.	Boys aged						Total boys.	Girls aged							Total girls.	Total boys and girls in District.
	9	10	11	12	13	14		8	9	10	11	12	13	14		
North	.	1	.	1	1	4	7	.	.	.	.	1	2	1	4	11
East Boston	1	1	4	16	15	36	73	.	.	.	.	.	.	.	...	73
Central	.	1	6	12	22	37	78	1	2	4	13	17	21	19	77	155
Southern	1	13	28	52	45	15	154	.	.	.	.	.	.	.	...	154
South Boston	.	.	5	4	6	14	29	.	.	.	.	.	.	.	...	29
South	.	.	.	14	13	30	57	.	.	.	.	.	.	1	1	58
Roxbury, East District	.	.	2	3	6	9	20	.	.	.	.	.	.	1	1	21
Roxbury, West District	.	.	2	2	13	15	32	.	.	.	.	.	2	4	6	38
Dorchester, Northern	.	.	1	.	.	3	4	.	.	.	.	.	.	.	...	4
Dorchester, Southern	.	.	1	.	1	2	4	.	.	.	.	.	.	2	2	6
Totals	2	16	49	104	122	165	458	1	2	4	13	18	25	28	91	549

In a "Memorial" read before the Committee on Education of the Massachusetts Legislature, last February, a printed copy of which I have lately received, I find the following: "It is estimated that in the City of Boston alone there are from five to *ten thousand* children of poor, struggling families, who require their offspring to earn a daily pittance as the price of affording them the miserable shelter of a roof. These children support themselves by selling matches, soap, shoe-strings, toys, photographs, etc. They are from seven to twelve years of age. Their average earnings are from ten to seventy-five cents per day. They are left to grow up uneducated, both mentally and physically; their feelings are brutalized by habits that will eventually render them pests to society. Then there is a small army of beggars, going about the streets, learning full early the vices that fester in every large city. . . . How is this pledge (of the public care for the morals and minds of children) kept to those *ten thousand* children, who, in the City of Boston alone, are allowed to grow up criminals and vagrants?"

In the last report of the Bureau of Statistics of Labor, of Massachusetts, I find the following statement of the school attendance of Boston: "In Boston, the returns made by the school authorities to the Board of Education show 46,301 children, between 5 and 15, and only 36,868 at any school, public or private, leaving 9,443, or about 20 per cent., *not accounted for*. Whether the sworn returns are correct, we do not know, but such are the figurate results from the data given. We most sincerely hope that even the smallest number of non-attendants derived from any correct computations, or from any explanations, may be still further reduced. The honor and welfare of the State demand it."

Before this statement was printed, the Chief of the Bureau was informed by me that the above "figurate results" were *not correct*.

As estimated and figured statements respecting the number of children in this city who are growing up in ignorance, like those above quoted, are eagerly seized upon and quoted by the enemies of popular education, in proof of the failure of the system, and of the uselessness of laws such as we have for compelling the attendance of truants and absentees, I reprint, in this connection, for the use of the Board, the concluding portion of my last report respecting school attendance in this city: —

" Whole number of children between 5 and 15,		45,970
Number belonging to Public Schools,	38,220	
Number belonging to Private Schools,	8,593	
Total belonging to all schools,		46,813
Number in all schools over 15,		4,343
Number between 5 and 15 in all schools,		42,470
Number 5 years old not in school,	1,149	
Number 14 years old not in school,	1,419	
Half the number between 12 and 14 not in schools,	489	
Number between 5 and 15 unaccounted for,	443	
		3,500
		45,970

" It appears, then, that the whole number of pupils of all ages belonging to the public and private schools is considerably in excess of the number of persons in the city between five and fifteen years of age; that the number between these ages belonging to the public and private schools is 92 per cent. of the whole number in the city; that of the 7 per cent. not attending school, six-sevenths are pretty well accounted for, making 99 per cent. in school, or accounted for, while 1 per cent. remains unaccounted for. This statement of the case respecting the school attendance in this city seems to afford evidence for the belief that the number of children who are growing up without acquiring at least the rudiments of education is quite small. During the past ten years I do not remember to have met with the case of a child who had resided in the city until the age of fourteen without learning to read and write.

" Our truant officers are expected to look after all children not attending school, who are found in the streets without any lawful occupation. From their reports, and from information derived from other sources, I had good reason for believing that they are faithful. and efficient in the performance of their duty. But as I occasionally hear it said in educational speeches, or read in some newspaper communication, that there are several thousand — from ten to fifteen thousand I think is the number named! — vagrant urchins in the streets growing up in ignorance, idleness, and vice, I thought I would try to find where they were. Accordingly, some week or two ago, on a bright and sunny morning, taking care not to select a holiday, I set out on a voyage of discovery. I went to all the railroad stations, I drove round the marginal streets, scanning the wharves and alley-ways, keeping a sharp lookout for boys and girls of school age. The result of this perambulatory expedition, which occupied two or three hours, was quite extraordinary, in respect to the smallness of the number of children of school age that were found at all. Every one found was stopped and his case inquired into. The whole number found was hardly more than could be counted on one's fingers, and among them there was only one who had not a good reason for being out of school. This was a truant who had slipped through the fingers of his teacher, and escaped the vilgilance of the truant officer. The next day being fine, I continued the survey, going through nearly all the streets of a densely populated section of the city. The result was about the same as that of the preceding day. The few children found, with one exception, gave good reasons for their absence from school. He was a licensed newsboy, and was generally found in school. A similar district in another part of the city was inspected on the third day. It was the same thing over again. I propose to repeat this survey of the streets when the spring opens. In my last report I presented a tabulated report of the doings of the truant officers during the past ten years. That report affords strong evidence of the activity of those officers, and it is no doubt largely owing to their labors that so few absentees are found in our streets.

"But, however favorable our statistics of attendance may appear, it is nevertheless quite certain that there are many children in the city who are not in the way of acquiring what may be called a competent education, that is, a good elementary education; and so long as there is one such child remaining, our efforts to improve the attendance, and reduce absenteeism, should not be relaxed."

HYGIENE.

Twelve years ago I made an earnest appeal to the Board in behalf of physicial education, and urged *the introduction, into all grades of our schools, of a thorough system of Physical Training, as a part of school culture*, concluding with these words: "Hitherto we have directed our attention almost exclusively to intellectual education. The tasks of the brain have been greatly increased, without a corresponding increase of care for the preservation of health. This is the great defect of American education. It is fitting that Boston, this cradle of the great system of free popular education, should take the lead in showing to the world how this defect can be remedied. Henceforth, let both mind and body receive their due share of attention." The subject was referred to a Special Committee, with permission to report in print. The report submitted by this Committee was brief, but elaborate, and to the point. It said to the Board, "Your Committee concur, in the main, with the views of the Superintendent as to the deficiency in health and bodily vigor of the children and youth among us. Those persons who have never travelled, and who have never made the subject a study, are not fully aware of this physical degeneracy, because they have no standard of comparison. As a proof of its existence, however, it may be remarked that foreigners, on their arrival in America, are struck with the predominance of sallow, thin, unhealthful countenances, while on the other hand, the American, on his first visit to England, is surprised at precisely the opposite phenomenon,— the ruddy and healthful countenances being in the majority."

The Committee concluded their important report by recommending the appointment of a Standing Committee on Physical Training, with authority to appoint and nominate to the Board a suitably qualified person to aid and instruct the teachers in the training of their pupils in physical exercises, the time devoted to such exercises not to exceed half an hour each half day, nor to be less than a quarter of an hour.

About four years elapsed before action was taken on the recommendation of the report. In the mean time the subject was much discussed by members of the Committee, by teachers, parents, and the press. In my report, which immediately followed that of the Special Committee, attention to the subject was again invoked. I said: "Every day's experience in the schools deepens my conviction of the imperative necessity of making physical training a part of our school culture. This necessity is increased just in proportion to the perfection of the arrangements of the system, with a view to the highest intellectual results. The very completeness of our system in other respects is what makes it liable to injure the health, or, at least, to prevent the proper physical development of the pupils."

In the next and succeeding reports the topic was repeatedly discussed. Such language as the following was used: "The proposed reform in physical education is, in my opinion, as important as any which has been attempted since the origin of our system of schools. As long as it is deferred, we are losing a great part of the benefit which we might otherwise derive from our noble system of popular education. If we do not provide for it, our children must suffer for our neglect." The Committee on the Annual Report for 1861 earnestly advocated the proposed reform. At length, after four years of agitation and discussion, the first effective step was taken to remedy the evil complained of, by instituting the proposed Standing Committee. But its function was made to include *vocal* as well as *physical* training. An excellent instructor — Prof. Monroe — was appointed to instruct the teachers in these two branches of education. It was not long before he felt his salary to be inadequate. Instead of raising it, however, he was allowed a portion of his time for private instruction. At length the time of his employment in the school service was reduced to three months in the year; and finally, at his request, it was discontinued altogether. His services were extremely valuable. I know of no money that has been expended to better purpose for the improvement of our schools. Still it must be owned that he did not accomplish so much in the improvement of the hygiene of the schools, as in promoting good reading and vocal training. One of the valuable results of his labors was the production of an excellent Manual of vocal and physical training, which was put into the hands of the teachers, at the expense of the city. The system of vocal culture introduced is no doubt in itself highly beneficial in a hygienic point of view, as it requires breathing exercises, and such gymnastic training as is especially adapted for the development and strengthening of the muscles which effective vocal utterance bring into play.

In reviewing what has been done during the past twelve years for the improvement of the physical well-being of the pupils in our schools, I am glad to be able to say that some progress has been made. The vigorous and effective system of military drill provided for all the boys in our High Schools, has in my judgment been of incalculable advantage; and its moral results have been no less valuable than its physical effects. It is good both for those who command and those who obey. A gain in the score of health has been made by excluding from the Primary Schools children between four and five years of age. Another gain in favor of hygiene has been made in limiting the afternoon sessions of the schools to two hours. School accommodations have been improved. The average size of the school-rooms has been increased, while the average number of pupils to a room has decreased. The teachers take more pains than formerly to ventilate their rooms, without exposing their pupils to cold draughts of air. The Saturday session of the Girls' High and Normal School has been discontinued. By these and other means the average physical condition of the pupils in our schools has been improved.

Still I feel bound to say, and to say with emphasis, that there is still great room for improvement in physical culture. *We ought to aim, not merely* TO AVOID INJURING *the health of pupils while carrying on their instruction in our schools, but* TO INCREASE *their physical health, strength and beauty.* I dare call that system of education a failure which sends out into the world, to fight the battles of life, its finished graduates, with narrow shoulders, flat chests, crooked spines, pale faces, weak muscles, and low vital energy. You may say that the exigencies of modern society demand some sacrifice of physical health and strength to intellectual attainments. For one I deny the soundness of this doctrine altogether. Complete physical health and development is essential to the truest and best intellectual results of education.

I would not in the slightest degree underrate the value of what has been done in the interest of the physical well-being of the pupils of our schools. I see better looking countenances in all grades of our schools than I used to see, and I greatly rejoice at the sight. I see handsomer young men and young women in our High Schools, because I see broader shoulders, straighter spines and fresher faces. The spectacle gives me more hope for the future of the race. But when I consider the still existing errors, defects and shortcomings, in respect to the physical education of our children, I feel compelled to say that I think that all we have done in the interest of school hygiene during the past twelve years, is far, very far, from being what we can safely accept as a satisfactory finality. It is in truth only a *beginning* of the vast work yet to be accomplished in this direction, if we mean to make our system of education a complete success.

Our boys receive less physical injury from their schooling than our girls. Nature helps the boy more. The boy manages to get some wholesome play. But the poor girl is easily crushed under the terrible weight of school lessons. Her strong love of approbation, given to her for a wise purpose, is easily made to work her physical ruin by the machinery of examinations. Therefore, if we have no compassion for the care of the boys, let us not disregard the physical well-being of our girls. While writing this, one of the victims of neglected school hygiene has revealed to me, in answer to inquiries, the process by which she has been deprived of the blessing of health, while preparing herself to earn a livelihood by teaching. The dear girl never suspected the aim of my questions, or the cause of her physical weakness. She seemed to be even grateful to her teachers, in the belief that they had made thorough work with her instruction. "Thorough work" indeed! O *Thoroughness,* what educational crimes have been committed in thy name! When shall we learn the true and right idea of thoroughness? For my part, if I must choose between what generally goes by the name of thoroughness, but is really for the most part cramming, and rosy health, give me the latter. I am willing to confess that my feeling on this subject is deep and strong, and if I were to take counsel of my feelings, I should write much about it. But reason tells me that I must try to be moderate, for if it is once imagined that I feel more than I reason on this subject, my influence in regard to it is at once weakened. But let me just remark *that my deep feeling in regard to this matter has come through the protracted exercise of reason and observation.* I am convinced that our girls must have a better physical education, if they are to be successful and happy women, no matter what may be their destination. Some will say that I am pleading for idleness. Be it so. I do not hesitate to tell any mother in Boston that, in the present state of things, the head of a class in school is not a very safe or desirable place for a girl to occupy.

In conclusion, I would urge two items of immediate reform, in view of this matter: first, that the *rules in regard to home lessons be rigidly enforced; and second that our High School girls shall no longer be seen carrying home daily for study large bundles of class-books.* Respectfully submitted,

JOHN D. PHILBRICK,
Superintendent of Public Schools.

SEPTEMBER, 1872.

STATISTICS

ACCOMPANYING THE SEMI-ANNUAL REPORTS OF THE SUPERINTENDENT
OF SCHOOLS FOR THE SCHOOL YEAR

1871-1872.

STATISTICS OF THE SCHOOLS.

TEACHERS.

Tables showing the number of teachers of each sex, in the different grades of schools, August 31, 1872.

REGULAR TEACHERS.

SCHOOLS.	Males.	Females.	Total.
Latin School	11	...	11
English High School	17	...	17
Girls' High and Normal School	1	23	24
Highlands High School	1	5	6
Dorchester High School	1	4	5
Grammar Schools	66	398	464
Primary Schools	...	335	335
Licensed Minors' School	...	2	2
Deaf-Mute School	...	3	3
Evening Drawing-School	9	...	9
Evening Schools	23	63	86
Kindergarten School	...	1	1
Totals	129	834	963

SPECIAL TEACHERS.

SCHOOLS.	Males.	Females.	Total.
Vocal and Physical Culture: all the Schools	1	...	1
Military Drill: Latin, Eng. High and Highlands	1	...	1
Drawing: High and Grammar Schools	6	1	7
French: High Schools	3	1	4
German: High Schools	2	...	2
Music: High, Grammar and Primary	5	...	5
Sewing: Grammar Schools	...	18	18
Totals	18	20	38

HIGH SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1872.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head Master.	Masters.	Sub-Masters.	H. Assistants.	Assistants.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Latin	60	29	222	. . .	222	216	. .	216	6	97.0	1	10	.	.	.
English High	252	41	541	. . .	541	528	. .	528	13	97.6	1	5	11	.	.
Girls' High and Normal	399	114	. . .	622	622	. .	580	580	42	93.0	1	.	.	3	19
Roxbury High	93	20	98	108	206	96	105	201	5	97.0	1	.	.	1	4
Dorchester High . . .	144	14	60	72	132	57	66	123	9	91.5	1	.	.	1	3
Totals	948	318	921	802	1723	897	751	1648	75	95.2	5	15	11	5	26

HIGH SCHOOLS.

Abstract of Semi-Annual Returns, August, 1872.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head Masters.	Masters.	Sub-Masters.	H. Assistants.	Assistants.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Latin	4	42	191	. . .	191	174	. .	174	17	91.0	1	10	.	.	.
English High	. .	55	491	. . .	491	477	. .	477	14	97.0	1	5	11	.	.
Girls' High and Normal	71	151	. . .	558	558	. .	515	515	43	92.0	1	.	.	3	20
Roxbury High	11	32	91	103	194	86	97	183	11	94.0	1	.	.	1	4
Dorchester High . . .	139	12	53	70	123	47	61	108	15	89.0	1	.	.	1	3
Totals	225	292	826	731	1557	784	673	1457	100	92.3	5	15	11	5	27

Number of Boys admitted to the English High School from the Grammar Schools during the years 1844–1872.

SCHOOLS.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
Adams	9	10	10	7	9	9	5	11	11	0	0	0	0	1	2	7	5	3	1	7	2	7	8	4	18	1	11	12	14
Bigelow (Hawes) .	7	4	1	2	5	7	4	3	4	5	6	7	8	9	15	10	9	5	3	6	4	13	13	19	16	21	24	30	32
Boylston	5	5	2	4	4	1	3	0	2	2	1	1	0	0	0	3	4	3	0	2	4	9	2	4	14	2	0	0	9
Brimmer	1	2	3	7	4	10	11	5	11	8	10	16	10	19	13	19	25	19	18	18	15	28	24	33	27	21	24	29	27
Chapman	. .	. .	. .	. .	. .	0	0	3	1	3	3	3	2	1	3	2	5	5	1	3	6	3	4	12	17	9	14	8	6
Dwight	0	0	0	1	4	2	3	4	3	4	3	3	5	1	7	5	9	13	20	14	45	34	35	33	23	27	38	35	62
Eliot	8	9	6	9	2	6	2	0	4	9	9	9	7	8	4	3	4	4	3	8	6	8	13	8	9	20	11	14	21
Latin	0	1	2	5	4	0	0	0	4	3	5	5	2	8	2	1	6	6	6	2	4	3	3	2	3	1	7	2	2
Lawrence	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	0	0	0	6	4	2	5	1	2	1	7	5	6	14	18	24	22
Lincoln	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	0	6	3	4	3	6	3	8	5	17	15	18	23	24
Lyman	0	3	5	4	. .	6	1	2	0	4	3	2	1	0	0	2	2	2	0	0	0	1	5	7	6	6	7	11	10
Mayhew	7	9	3	4	8	6	11	8	11	14	7	3	6	13	6	9	7	6	5	6	9	8	15	11	7	10	5	9	12
Phillips	0	4	10	10	12	8	9	7	7	7	6	6	3	5	8	7	9	9	13	2	13	7	13	7	9	10	10	16	15
Prescott	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	9	6	7	14	19
Quincy	. .	. .	. .	0	2	3	10	8	11	12	4	11	8	18	14	8	9	6	8	11	7	16	16	10	12	12	15	7	18
Rice	. .	. .	. .		. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	10	18	26	35	50

GRAMMAR SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1872.

SCHOOLS.	Admitted.	Discharged.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	Ushers.	H. Assistants.	Assistants.	Sew'g Teach'rs.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.								
Adams	236	295	335	197	532	312	186	498	34	94.1	1	1	.	4	6	.
Bigelow	145	115	887	. . .	887	846	. . .	846	41	95.4	1	2	1	2	14	.
Bowditch . . .	290	313	. . .	533	533	. . .	509	509	24	95.4	1	.	.	4	9	1
Bowdoin	275	332	. . .	494	494	. . .	464	464	30	93.0	1	.	.	3	8	1
Boylston	227	199	193	207	400	183	188	371	29	92.3	1	1	.	4	5	1
Brimmer	254	200	638	. . .	638	606	. . .	606	32	94.9	1	1	1	2	11	.
Chapman . . .	343	286	306	262	568	288	248	536	32	95.0	1	1	.	4	6	.
Comins	191	177	423	385	808	398	361	759	49	94.0	1	1	.	5	10	1
Dearborn . . .	383	358	364	350	714	338	324	662	52	93.0	1	1	.	4	10	1
Dorchester Dis't.	433	258	534	541	1,075	490	483	973	102	87.0	7	.	.	4	22	1
Dudley	191	131	. . .	258	258	. . .	239	239	19	93.0	*1	.	.	2	4	1
Dwight	128	53	599	. . .	599	581	. . .	581	18	96.6	1	1	1	2	8	.
Eliot	345	313	742	. . .	742	707	. . .	707	35	95.0	1	1	1	2	11	.
Everett	675	237	. . .	684	684	. . .	655	655	29	95.7	1	.	.	4	10	1
Franklin	638	353	. . .	652	652	. . .	608	608	44	93.3	1	.	.	4	10	1
Hancock	414	383	. . .	873	873	. . .	830	830	43	95.0	1	.	.	5	13	1
Lawrence . . .	360	291	858	. . .	858	834	. . .	834	24	97.2	1	1	2	2	12	.
Lewis	264	181	294	267	561	279	252	531	30	94.0	1	1	.	3	7	1
Lincoln	203	183	455	319	774	428	299	727	47	93.0	1	1	.	4	9	1
Lyman	189	142	320	178	498	301	169	470	28	94.3	1	1	.	3	7	1
Mayhew	231	240	468	. . .	468	442	. . .	442	26	94.0	1	1	1	2	8	.
Norcross	333	301	. . .	687	687	. . .	667	667	20	97.0	1	.	.	3	11	1
Phillips	143	87	551	. . .	551	492	. . .	492	59	89.8	1	1	1	2	8	.
Prescott	571	287	325	284	609	305	267	572	37	94.0	1	1	.	4	7	.
Quincy	249	253	609	. . .	609	584	. . .	584	25	95.8	1	1	1	2	9	.
Rice	574	244	618	. . .	618	594	. . .	594	24	96.2	1	1	1	2	10	.
Sherwin	222	220	446	354	800	421	331	752	48	93.5	1	1	.	3	13	1
Shurtleff	282	229	. . .	664	664	. . .	618	618	46	93.0	1	.	.	4	9	1
Washington . .	69	59	243	. . .	243	228	. . .	228	15	94.0	1	.	.	2	4	.
Wells	231	218	. . .	451	451	. . .	430	430	21	95.0	1	.	.	3	7	1
Winthrop . . .	897	594	. . .	757	757	. . .	688	688	69	90.8	1	.	.	5	12	1
Totals . . .	9986	7422	12.208	9,397	19,605	9657	8816	18,473	1132	93.0	37	20	10	99	290	18

* Female Principal.

GRAMMAR SCHOOLS.

Abstract of Semi-Annual Returns, August, 1872.

SCHOOLS.	Admitted.	Discharged.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	Ushers.	H. Assistants.	Assistants.	Sew'g Teach'rs.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.								
Adams	135	219	346	193	539	316	182	498	41	92.1	1	1	.	4	6	.
Bigelow	126	294	900	. . .	900	851	. . .	851	49	94.8	1	2	1	2	14	.
Bowditch	248	314	. . .	518	518	. . .	489	489	29	94.4	1	.	.	4	9	1
Bowdoin	158	217	. . .	511	511	. . .	470	470	41	91.0	1	.	.	3	8	1
Boylston	157	187	209	205	414	194	185	379	35	91.1	1	.	.	1	9	1
Brimmer	213	337	649	. . .	649	612	. . .	612	37	94.2	1	1	1	2	11	.
Chapman	79	58	301	275	576	281	257	538	38	93.0	1	1	.	4	7	.
Comins	168	230	432	412	844	401	382	783	61	93.0	1	1	.	5	11	1
Dearborn	351	355	397	374	771	361	340	701	70	91.0	1	1	.	4	11	1
Dorchester Dis't.	381	459	554	556	1,110	500	482	982	128	87.0	7	.	.	7	19	1
Dudley	123	188	. . .	269	269	. . .	249	249	20	92.0	*1	.	.	2	4	1
Dwight	82	79	622	. . .	622	595	. . .	595	27	95.3	1	1	1	2	8	.
Eliot	266	335	787	. . .	787	742	. . .	742	45	94.2	1	1	1	2	11	.
Everett	142	344	. . .	681	681	. . .	647	647	34	94.9	1	.	.	4	10	1
Franklin	327	600	. . .	622	622	. . .	572	572	50	92.0	1	.	.	4	10	1
Hancock	315	388	. . .	874	874	. . .	825	825	49	94.4	1	.	.	5	13	1
Lawrence	389	452	875	. . .	875	838	. . .	838	37	96.0	1	1	2	2	12	.
Lewis	312	309	320	269	589	300	250	550	39	93.2	1	1	.	3	8	1
Lincoln	124	76	458	314	772	430	289	719	53	93.0	1	1	.	4	12	1
Lyman	90	179	307	160	467	282	149	431	36	92.0	1	1	.	3	7	1
Mayhew	181	269	475	. . .	475	436	. . .	436	39	91.0	1	1	1	2	8	.
Norcross	252	316	. . .	695	695	. . .	667	667	28	96.0	1	.	.	3	11	1
Phillips	56	114	581	. . .	581	521	. . .	521	60	89.4	1	1	1	2	8	.
Prescott	266	294	324	287	611	301	263	564	47	91.0	1	1	.	4	8	.
Quincy	179	250	601	. . .	601	573	. . .	573	28	95.3	1	1	1	2	9	.
Rice	204	547	639	. . .	639	602	. . .	602	37	94.0	1	1	1	2	10	.
Sherwin	506	510	445	354	799	422	328	750	49	93.7	1	1	.	4	11	1
Shurtleff	311	422	. . .	662	662	. . .	604	604	58	91.0	1	.	.	4	10	1
Washington	47	38	256	. . .	256	241	. . .	241	15	94.2	1	.	.	2	4	.
Wells	208	366	. . .	444	444	. . .	419	419	25	94.0	1	.	.	3	7	1
Winthrop	490	714	. . .	761	761	. . .	679	679	82	89.0	1	.	.	5	12	1
Totals	6886	9560	10,478	9436	19,914	9799	8728	18,527	1387	92.8	37	19	10	100	298	13

* Female Principal.

GRAMMAR SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, January 31, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole number.	Under 8 years.	Between 8 and 10 years.	Between 10 and 12 years.	Between 12 and 14 years.	Between 14 and 15 years.	Over 15 years.
Adams . . .	58	81	102	98	100	95	534	1	58	178	174	88	35
Bigelow . .	46	72	123	148	255	256	900	2	176	313	276	86	47
Bowditch .	36	86	45	44	141	164	516	0	104	175	173	37	27
Bowdoin . .	46	103	96	101	75	92	513	1	70	150	176	54	62
Boylston . .	19	41	43	85	86	127	401	2	68	179	108	32	12
Brimmer . .	44	83	128	128	125	144	652	2	124	201	211	65	49
Chapman .	24	55	111	120	128	142	580	4	99	160	184	91	42
Comins . .	46	66	85	103	255	250	805	5	139	303	258	61	39
Dearborn .	72	84	83	94	161	201	695	0	58	244	251	89	53
Dorch. Dist.	99	150	188	177	308	219	1141	6	140	375	384	141	95
Dudley . .	34	23	54	33	45	62	251	1	43	81	75	30	21
Dwight . .	49	96	101	99	103	166	614	1	90	207	190	64	62
Eliot	41	92	101	97	206	198	735	6	157	267	232	50	23
Everett . .	47	103	104	133	148	160	695	1	73	205	212	121	83
Franklin . .	36	101	99	90	135	198	659	0	79	195	234	68	83
Hancock . .	32	51	193	196	175	200	847	7	176	335	253	49	27
Lawrence .	48	98	90	178	196	242	852	9	178	319	263	60	23
Lewis . .	59	111	110	111	106	59	556	2	64	201	170	62	57
Lincoln . .	88	106	104	158	171	165	792	2	109	302	244	82	53
Lyman . .	45	62	64	74	109	136	490	1	65	162	171	60	31
Mayhew . .	75	47	42	59	109	122	454	1	108	144	133	41	27
Norcross . .	45	78	103	101	157	187	671	3	106	249	209	70	34
Phillips . .	38	49	158	103	101	143	592	0	98	278	163	34	19
Prescott . .	37	50	102	103	104	216	612	1	93	197	192	81	48
Quincy . .	39	87	83	94	148	145	596	6	120	203	217	35	15
Rice	35	58	119	78	184	157	631	1	104	227	203	64	32
Sherwin . .	61	94	92	86	171	241	745	3	121	251	240	93	37
Shurtleff . .	45	51	106	102	204	148	656	2	129	228	195	55	47
Washington	32	34	47	41	39	50	243	2	54	60	76	31	20
Wells . . .	20	50	35	108	91	138	442	1	58	133	145	58	47
Winthrop .	52	87	85	131	155	252	762	3	103	225	238	100	93
Total . .	1448	2349	2996	3273	4491	5075	19,632	76	3164	6747	6250	2052	1343

GRAMMAR SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, July, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole number.	Under 8 years.	Between 8 and 10 years.	Between 10 and 12 years.	Between 12 and 14 years.	Between 14 and 15 years.	Over 15 years.
Adams . . .	45	59	77	79	77	98	435	1	81	134	150	35	34
Bigelow . .	40	65	121	126	227	245	824	4	165	284	251	74	46
Bowditch .	33	69	34	36	106	170	448	2	94	145	135	42	30
Bowdoin . .	41	87	86	89	94	97	494	4	67	140	162	54	67
Boylston . .	19	29	42	79	77	125	371	4	75	143	114	21	14
Brimmer . .	38	70	76	105	110	111	510	6	96	185	133	48	42
Chapman .	47	22	104	118	126	184	601	6	129	178	123	114	51
Comins . .	46	74	144	176	210	97	747	3	136	285	235	54	34
Dearborn .	61	83	89	76	138	244	691	3	99	225	233	70	61
Dorch. Dist.	91	138	186	185	296	264	1160	6	157	364	400	136	97
Dudley . .	15	25	17	25	37	57	176	1	52	53	34	27	9
Dwight . .	45	69	80	73	84	118	469	0	62	161	138	52	56
Eliot	37	77	81	81	191	199	666	8	170	241	185	40	22
Everett . .	40	82	75	110	86	100	493	1	81	142	122	115	32
Franklin . .	33	63	46	47	70	127	386	0	45	108	121	46	66
Hancock . .	30	42	153	162	190	197	774	34	160	295	202	51	32
Lawrence .	40	85	92	174	196	202	789	7	162	304	227	69	20
Lewis . . .	50	97	100	107	103	112	569	4	78	193	167	77	50
Lincoln . .	75	83	83	137	145	239	762	5	140	262	208	105	42
Lyman . .	33	44	46	64	97	117	401	0	60	117	153	46	25
Mayhew . .	50	27	30	45	99	115	366	5	80	126	113	26	16
Norcross . .	42	73	85	84	133	190	607	0	113	202	202	51	39
Phillips . .	33	42	136	109	97	116	533	1	117	163	151	64	37
Prescott . .	35	42	80	93	80	253	583	1	130	173	154	79	46
Quincy . .	35	55	85	80	130	138	523	4	118	187	163	37	14
Rice	26	10	25	58	59	112	290	3	106	61	67	40	13
Sherwin . .	55	73	82	89	188	246	733	2	118	285	227	58	43
Shurtleff . .	40	47	88	85	175	180	615	2	141	194	161	63	54
Washington	25	35	48	43	45	58	254	3	48	80	86	24	13
Wells . . .	33	17	28	48	56	112	294	3	42	95	79	39	36
Winthrop .	52	49	62	75	104	196	538	3	99	162	155	56	63
Total . .	1285	1833	2481	2858	3826	4819	17,102	126	3221	5687	5051	1813	1204

GRAMMAR SCHOOLS. — DORCHESTER.

Abstract of Semi-Annual Returns, January 31, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Assistants.	Sewing Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Atherton	5	1	21	12	33	19	8	27	6	80.0	*1	..	..
Everett	34	32	98	95	193	89	84	173	20	89.4	1	4	..
Gibson	49	18	55	59	114	51	52	103	11	90.6	1	3	..
Harris	99	48	79	93	172	72	85	157	15	91.3	1	4	.
Mather	149	84	109	105	214	97	95	192	22	89.0	1	5	..
Minot	35	37	65	68	133	60	61	121	12	91.0	1	3	..
Stoughton	40	7	62	69	131	59	62	121	10	91.9	1	4	..
Tileston	22	21	45	40	85	43	36	79	6	93.0	1	2	..
Totals	433	248	534	541	1075	490	483	973	102	87.0	8	25	25

* Female Principal.

Abstract of Semi-Annual Returns, August, 1872.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Assistants.	Sewing Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Atherton	3	7	26	17	43	21	12	33	10	76.	*1	..	..
Everett	47	33	96	86	182	87	73	160	22	85.	1	4	..
Gibson	18	25	57	54	111	51	47	98	13	88.	1	3	..
Harris	117	132	88	110	198	80	98	178	20	90.	1	4	..
Mather	105	148	117	110	227	105	95	200	27	88.	1	5	1
Minot	64	56	64	61	125	58	51	109	16	89.	1	3	..
Stoughton	2	18	64	81	145	59	73	132	13	87.	1	4	..
Tileston	25	40	42	37	79	39	33	72	7	91.	1	2	..
Totals	381	459	554	556	1110	500	482	982	128	87.	8	25	1

* Female Principal.

GRAMMAR SCHOOLS. — DORCHESTER.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, January 31, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. Jan. 31, 1872.	Under 8 y'rs.	Between 8 and 10 years.	Between 10 and 12 years.	Between 12 and 14 years.	Between 14 and 15 years.	Over 15 y'rs.
Everett ..	12	27	50	22	52	32	195	1	27	67	67	21	12
Gibson* ..	9	13	26	36	41	29	154	..	18	45	49	24	18
Harris....	21	29	22	37	52	52	213	1	37	78	52	28	17
Mather ...	16	32	40	21	74	49	232	1	35	71	90	21	14
Minot	8	19	13	26	46	21	133	..	8	49	48	13	15
Stoughton	18	23	22	20	22	26	131	..	2	40	54	22	13
Tileston ..	15	7	15	15	21	10	83	3	13	25	24	12	6
Totals..	99	150	188	177	308	219	1141	6	140	375	384	141	95

* Grammar class of Atherton reckoned with the Gibson.

GRAMMAR SCHOOLS. — DORCHESTER.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, August, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. Jan. 31, 1872.	Under 8 y'rs.	Between 8 and 10 years.	Between 10 and 12 years.	Between 12 and 14 years.	Between 14 and 15 years.	Over 15 y'rs.
Everett ..	16	28	49	30	51	35	209	..	42	71	57	26	13
Gibson* ..	5	15	20	35	36	41	152	..	16	47	49	21	19
Harris ...	20	22	33	27	30	68	200	1	42	72	57	14	14
Mather ...	16	32	33	23	95	42	241	3	28	70	93	27	20
Minot	14	12	25	17	45	28	141	1	15	50	52	17	6
Stoughton	14	23	20	37	24	21	139	..	2	36	62	22	17
Tileston ..	6	6	6	16	15	29	78	1	12	18	30	9	8
Totals..	91	138	186	185	296	264	1160	6	157	364	400	136	97

* Grammar class of Atherton reckoned with the Gibson.

Ages of Pupils in each of the Grammar Schools, March 1, 1872.

SCHOOLS.	BOYS.											GIRLS.											TOTAL.		
	Less than eight years.	Eight years of age.	Nine years of age.	Ten years of age.	Eleven years of age.	Twelve years of age.	Thirteen years of age.	Fourteen years of age.	Fifteen years of age.	Sixteen years of age.	More than sixteen years.	Less than eight years.	Eight years of age.	Nine years of age.	Ten years of age.	Eleven years of age.	Twelve years of age.	Thirteen years of age.	Fourteen years of age.	Fifteen years of age.	Sixteen years of age.	More than sixteen years.	Boys.	Girls.	Total.
Adams	1	17	29	64	57	60	63	49	17	2	.	3	16	18	26	28	30	37	22	21	5	6	359	212	571
Bigelow	11	81	132	167	157	168	121	79	41	14	5	.	...	...	...	...	...	...	...	...	...	.	976	...	976
Bowditch	...	...	...	...	...	...	...	...	...	...	.	3	40	81	84	98	87	88	35	21	9	2	...	548	548
Bowdoin	...	...	...	...	...	...	...	...	...	...	.	5	27	63	81	71	92	83	62	38	23	3	...	548	548
Boylston	4	21	26	34	52	33	26	17	5	3	1	3	17	33	44	53	30	23	14	7	...	.	222	224	446
Brimmer	6	49	93	95	122	116	90	64	39	8	12	.	...	...	...	...	...	...	...	...	...	.	694	...	694
Chapman	6	17	36	56	50	61	54	29	25	1	.	.	25	38	38	35	39	37	43	20	13	1	335	289	624
Comins	4	14	46	87	85	82	65	55	31	12	2	1	25	43	77	79	98	57	34	26	11	.	483	451	934
Dearborn	1	12	40	72	84	72	69	38	14	6	2	2	15	42	67	58	71	57	50	16	7	5	410	390	800
Dorchester District	4	16	51	77	99	109	102	64	50	14	1	4	14	57	102	92	102	86	91	51	9	3	587	611	1,198
Dudley	...	...	...	...	...	...	...	...	...	...	.	2	25	36	42	47	39	43	29	18	7	2	...	290	290
Dwight	6	20	87	88	103	103	113	67	46	16	3	.	...	...	...	...	...	...	...	...	...	.	652	...	652
Eliot	15	80	143	142	148	126	97	46	21	3	3	.	...	...	...	...	...	...	...	...	...	.	824	...	824

Everett	...	...	...	...	...	...	...	...	...	...	.	4	26	74	114	85	92	107	94	69	33	12	...	710	710
Franklin	...	...	...	...	...	...	...	...	...	...	.	5	20	82	85	103	117	103	80	60	19	8	...	682	682
Hancock	...	...	...	...	...	...	...	...	...	...	.	23	79	142	165	179	138	110	54	28	7	1	...	926	926
Lawrence	17	71	136	172	165	155	125	69	23	4	.	.	...	...	...	...	...	...	...	...	...	.	937	...	937
Lewis	4	17	50	48	65	54	44	29	18	11	.	4	8	21	35	49	43	53	37	25	8	3	340	286	626
Lincoln	3	33	57	75	104	74	47	49	24	1	1	2	14	34	56	61	66	58	36	21	6	5	468	359	827
Lyman	1	17	41	52	54	78	54	38	12	...	.	.	2	19	20	32	25	27	22	18	7	1	347	173	520
Mayhew	7	39	75	72	81	89	80	51	25	6	1	.	...	...	...	...	...	...	...	...	...	.	526	...	526
Norcross	...	...	...	...	...	...	...	...	...	...	.	6	49	83	125	121	139	90	73	33	6	1	...	726	726
Phillips	...	31	70	107	99	110	124	42	31	7	.	.	...	...	...	...	...	...	...	...	...	.	621	...	621
Prescott	1	23	41	62	57	74	39	37	18	5	1	1	16	32	50	45	49	52	31	25	9	1	358	311	669
Quincy	9	50	88	106	95	125	107	37	16	1	.	.	...	...	...	...	...	...	...	...	...	.	634	...	634
Rice	6	26	85	124	122	108	99	76	25	9	2	.	...	...	...	...	...	...	...	...	...	.	682	...	682
Sherwin	7	23	71	84	87	89	57	42	17	4	.	5	21	34	72	77	72	50	41	14	6	2	481	394	875
Shurtleff	...	...	...	...	...	...	...	...	...	...	.	4	49	85	121	130	109	104	62	37	22	1	...	724	724
Washington	3	29	45	32	36	30	44	29	17	6	.	.	...	...	...	...	...	...	...	...	...	.	271	...	271
Wells	...	...	...	...	...	...	...	...	...	...	.	6	27	53	71	66	77	76	57	26	13	2	...	474	474
Winthrop	...	...	...	...	...	...	...	...	...	...	.	8	44	95	128	122	128	117	109	69	23	14	...	857	857
Totals	116	686	1,442	1.816	1.922	1.916	1.620	1,007	515	133	34	91	559	1.165	1.603	1.631	1,643	1.458	1.076	643	243	73	11,207	10,185	21,392

Ages of Pupils in each of the Grammar Schools, Dorchester, March 1, 1872.

SCHOOLS.	BOYS.											GIRLS.											TOTAL.		
	Less than eight years.	Eight years of age.	Nine years of age.	Ten years of age.	Eleven years of age.	Twelve years of age.	Thirteen years of age.	Fourteen years of age.	Fifteen years of age.	Sixteen years of age.	More than sixteen years.	Less than eight years.	Eight years of age.	Nine years of age.	Ten years of age.	Eleven years of age.	Twelve years of age.	Thirteen years of age.	Fourteen years of age.	Fifteen years of age.	Sixteen years of age.	More than sixteen years.	Boys.	Girls.	Total.
Everett	..	1	9	13	14	23	18	11	7	1	..	..	..	7	16	15	13	13	13	7	1	..	97	85	182
Gibson*	..	2	14	13	10	11	17	9	7	5	..	..	2	5	12	15	7	15	12	6	2	1	88	77	165
Harris	1	3	12	13	14	18	9	12	12	2	..	..	2	15	22	12	14	15	17	14	4	1	96	116	212
Mather	2	7	8	16	24	22	26	12	9	1	..	3	4	14	15	16	26	12	19	10	..	..	127	119	246
Minot	..	2	5	7	14	12	10	6	5	2	1	1	1	9	17	23	10	18	8	6	1	..	64	94	158
Stoughton	..	1	1	9	13	16	14	8	8	..	..	..	..	2	16	10	20	9	16	6	1	1	70	81	151
Tileston	1	..	2	6	10	7	8	6	2	3	..	..	5	5	4	1	12	4	6	2	..	..	45	39	84
Totals	4	16	51	77	99	109	102	64	50	14	1	4	14	57	102	92	102	86	91	51	9	3	587	611	1,198

* Grammar class of Atherton reckoned with the Gibson.

Table showing the number of Pupils sent to the High Schools, by each Grammar School, July, 1871.

Schools.	Latin School.	English High School.	Girls' High and Normal Sch'l.	Highlands High School.	Dorchest'r High School.	Totals.
Adams	5	12	14	...	...	31
Bigelow	...	39	...	...	...	39
Bowditch	...	...	4	...	...	4
Bowdoin	...	...	15	...	...	15
Boylston	...	...	...	...	...	...
Brimmer	2	29	...	...	...	31
Chapman	1	8	11	...	...	20
Comins	...	...	9	16	...	25
Dearborn	...	...	1	22	...	23
Dorchester District	1	...	17	...	54	72
Dudley	...	...	8	14	...	22
Dwight	10	35	...	1	...	46
Eliot	1	14	...	...	...	15
Everett	...	...	39	1	...	40
Franklin	...	...	27	...	...	27
Hancock	...	...	19	...	...	19
Lawrence	3	24	...	...	...	27
Lewis	...	...	6	31	...	37
Lincoln	5	23	17	...	...	45
Lyman	2	11	7	...	...	20
Mayhew	1	9	...	...	...	10
Norcross	...	...	20	...	...	20
Phillips	6	16	...	...	...	22
Prescott	...	14	8	...	...	22
Quincy	1	7	...	...	...	8
Rice	2	35	...	1	...	38
Sherwin	...	...	...	...	...	...
Shurtleff	...	...	29	...	...	29
Washington	...	...	...	12	...	12
Wells	...	...	9	...	...	9
Winthrop	...	...	30	...	...	30
Total	40	276	290	98	54	758

Table showing the number of Pupils admitted to the High Schools, whether they joined or not, by each Grammar School, July, 1872.

SCHOOLS.	Latin School.	English High School.	Girls' High and Normal Sch'l.	Highlands High School.	Dorchest'r High School.	Totals.
Adams	2	14	24	...	...	40
Bigelow	...	32	...	1	...	33
Bowditch	...	...	8	...	...	8
Bowdoin	...	...	21	...	...	21
Boylston	...	9	9	...	...	18
Brimmer	2	27	...	...	...	29
Chapman	...	6	19	...	...	25
Comins	1	...	16	26	...	43
Dearborn	...	...	5	23	...	28
Dorchester District	3	...	14	...	46	63
Dudley	...	...	3	9	...	12
Dwight	5	62	...	2	...	69
Eliot	1	21	...	...	...	22
Everett	...	...	33	...	...	33
Franklin	...	...	29	...	...	29
Hancock	...	...	20	...	...	20
Lawrence	1	22	...	...	...	23
Lewis	...	...	6	26	...	32
Lincoln	...	24	17	...	...	41
Lyman	1	10	11	...	...	22
Mayhew	1	12	...	...	...	13
Norcross	...	...	40	...	...	40
Phillips	7	15	...	...	...	22
Prescott	2	19	10	...	...	31
Quincy	...	18	...	...	...	18
Rice	3	50	...	...	...	53
Sherwin	...	...	3	7	...	10
Shurtleff	...	...	32	...	...	32
Washington	...	...	...	8	...	8
Wells	...	...	9	...	...	9
Winthrop	...	...	22	...	...	22
Total	29	341	351	102	46	879

PRIMARY SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1872.

DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 yrs.	Over 8 yrs.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	9	295	120	415	271	107	378	37	89.1	210	191	401
Bigelow	14	368	274	642	344	248	592	50	90.6	368	227	595
Bowditch . . .	10	189	206	395	175	185	360	35	91.9	236	153	389
Bowdoin . . .	11	226	250	476	205	220	425	51	88.5	277	228	505
Boylston . . .	6	156	152	308	145	140	285	23	92.5	208	97	305
Brimmer . . .	12	234	217	451	215	198	413	38	91.8	300	160	460
Chapman . . .	10	286	152	438	263	132	395	43	90.1	289	153	442
Comins	17	437	394	831	396	341	737	94	86.7	466	345	811
Dearborn . . .	17	432	393	825	390	339	729	96	88.0	441	386	827
Dorchester . .	20	454	434	888	399	371	770	118	89.6	476	420	896
Dwight	6	131	132	263	121	121	242	21	91.2	176	95	271
Eliot	16	447	302	749	417	279	696	53	93.0	495	252	747
Everett	10	291	242	533	271	227	498	35	92.3	291	264	555
Franklin . . .	6	165	165	330	153	154	307	23	92.3	191	147	338
Hancock . . .	19	403	477	880	384	440	824	56	93.0	600	266	866
Lawrence . . .	12	574	. . .	574	543	. . .	543	31	94.5	308	251	559
Lewis	10	275	215	490	248	186	434	56	88.3	270	224	494
Lincoln	11	340	228	568	316	205	521	47	91.0	307	272	579
Lyman	7	207	99	306	192	91	283	24	91.6	178	123	301
Mayhew	7	194	95	289	174	81	255	34	88.2	136	170	306
Norcross . . .	14	182	428	610	177	410	587	23	96.7	350	264	614
Phillips	7	159	110	269	142	99	241	28	88.4	159	129	288
Prescott	9	235	201	436	218	180	398	38	91.1	233	208	441
Quincy	11	233	208	441	213	187	400	41	90.0	279	153	432
Rice	10	184	172	356	168	154	322	34	89.4	200	175	375
Sherwin	12	300	272	572	278	248	526	46	91.9	376	203	579
Shurtleff	12	340	289	629	313	258	571	58	90.0	423	209	632
Washington . .	7	160	145	305	145	129	274	31	89.8	215	99	314
Wells	12	252	262	514	235	239	474	40	92.8	301	239	540
Winthrop . . .	9	170	186	356	155	165	320	36	89.0	248	139	387
Training School	1	38	55	93	36	52	88	5	95.0	72	18	90
Totals	334	8,357	6,875	15,232	7,702	6,186	13,888	1,344	89.2	9,079	6,260	15,339

PRIMARY SCHOOLS.

Abstract of Semi-Annual Returns, August, 1872.

DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 yrs.	Over 8 yrs.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	9	282	115	397	259	103	362	35	90.4	233	180	413
Bigelow	13	307	225	532	283	203	486	46	91.1	376	173	549
Bowditch . . .	10	163	169	332	147	151	298	34	88.9	238	113	351
Bowdoin . . .	11	215	225	440	190	197	387	53	86.2	250	171	421
Boylston . . .	7	164	163	327	154	149	303	24	92.5	224	97	321
Brimmer . . .	12	224	191	415	204	171	375	40	89.4	273	148	421
Chapman . . .	10	285	147	432	253	127	380	52	89.5	315	133	448
Comins	16	424	372	796	382	323	705	91	89.1	472	330	802
Dearborn . . .	17	407	351	758	364	294	658	100	86.7	469	339	808
Dorchester . .	20	441	398	839	385	325	710	129	84.4	527	357	884
Dwight	6	134	117	251	122	105	227	24	90.9	177	98	275
Eliot	16	413	295	708	380	274	654	54	92.0	481	237	718
Everett	10	266	225	491	249	205	454	37	91.3	287	231	518
Franklin . . .	6	136	127	263	127	114	241	22	91.5	145	88	233
Hancock . . .	19	371	431	802	360	389	749	53	92.8	572	262	834
Lawrence . . .	12	507	. . .	507	484	. . .	484	23	95.1	333	198	531
Lewis	10	237	200	437	205	170	375	62	85.1	288	189	477
Lincoln	11	319	213	532	289	191	480	52	89.8	329	244	573
Lyman	7	199	101	300	185	91	276	24	91.5	166	138	304
Mayhew	7	181	83	264	158	70	228	36	84.5	172	121	293
Norcross . . .	14	171	402	573	165	381	546	27	95.0	395	239	634
Phillips	7	163	109	272	144	99	243	29	87.6	164	115	279
Prescott	9	215	199	414	192	170	362	52	87.0	261	176	437
Quincy	11	222	181	403	207	161	368	35	89.6	262	141	403
Rice	10	185	200	385	169	184	353	32	90.6	221	124	345
Sherwin	12	285	247	532	261	226	487	45	91.0	357	217	574
Shurtleff	13	319	288	607	288	252	540	67	88.0	384	211	595
Washington . .	7	158	128	286	141	114	255	31	88.7	210	106	310
Wells	12	234	231	465	218	209	427	38	90.9	323	138	461
Winthrop . . .	9	158	181	339	145	161	306	33	89.6	245	103	348
Training School	2	43	57	100	41	54	95	5	94.0	25	19	44
Totals	335	7,828	6,371	14,199	7,151	5,663	12,814	1,385	89.8	9,174	5,436	14,610

PRIMARY SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each District, January 31, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. July, 1870.	Five years.	Six years.	Seven years.	Eight years.	Nine years and over.
Adams . .	79	59	45	95	40	83	401	53	80	77	69	122
Bigelow . .	104	93	90	82	104	122	595	73	127	168	108	119
Bowditch .	73	76	50	51	60	79	389	76	76	84	78	75
Bowdoin .	80	114	68	66	63	114	505	62	113	102	96	132
Boylston .	45	48	53	50	56	53	305	35	90	83	61	36
Brimmer .	59	78	92	96	47	88	460	90	104	106	91	69
Chapman .	60	53	67	67	90	105	442	80	115	94	93	60
Comins . .	107	160	103	151	124	166	811	90	158	218	166	179
Dearborn .	149	143	121	110	110	194	827	123	157	161	153	233
Dorchester	176	200	165	125	108	122	896	113	173	190	181	239
Dwight . .	39	49	50	43	40	50	271	31	62	83	47	48
Eliot . . .	113	120	111	112	105	186	747	119	211	165	116	136
Everett . .	72	97	82	95	99	110	555	64	99	128	118	146
Franklin .	55	50	59	57	59	58	338	20	73	98	61	86
Hancock .	118	122	116	175	141	194	866	166	219	215	113	153
Lawrence .	108	98	95	70	98	90	559	81	129	98	102	149
Lewis . . .	79	79	85	63	91	97	494	55	96	119	110	114
Lincoln . .	87	98	86	94	111	103	579	53	114	140	140	132
Lyman . .	57	52	47	41	50	54	301	33	65	80	60	63
Mayhew . .	68	66	37	48	31	56	306	32	44	60	73	97
Norcross .	108	92	105	84	99	126	614	90	122	138	130	134
Phillips . .	45	64	40	39	39	61	288	50	55	54	43	86
Prescott . .	63	81	49	66	68	114	441	59	90	84	89	119
Quincy . .	43	76	77	71	61	104	432	74	123	82	78	75
Rice	62	69	46	53	75	70	375	48	61	91	93	82
Sherwin . .	139	163	103	43	55	76	579	103	131	124	108	113
Shurtleff .	63	108	88	108	101	164	632	81	180	162	121	88
Washington	60	64	52	48	46	44	314	37	91	87	56	43
Wells . . .	85	84	94	78	75	124	540	92	137	129	94	88
Winthrop .	70	49	22	62	87	97	387	56	106	86	81	58
Training .	. .	18	13	20	18	21	90	45	16	11	14	4
Totals . .	2,466	2,723	2,301	2,363	2,361	3,125	15,339	2,184	3,417	3,517	2,943	3,278

PRIMARY SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each District, July, 1872.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. July, 1872.	Five years.	Six years.	Seven years.	Eight years.	Nine years and over.
Adams . .	75	63	88	46	51	90	413	47	107	79	75	105
Bigelow . .	80	92	74	99	96	108	549	95	134	147	106	67
Bowditch .	79	46	51	60	43	72	351	73	95	70	73	40
Bowdoin .	76	76	68	55	52	94	421	67	88	95	78	93
Boylston .	59	51	49	54	53	55	321	38	96	90	38	59
Brimmer .	67	61	71	71	67	84	421	79	94	100	76	72
Chapman .	60	50	76	62	82	118	448	75	121	119	74	59
Comins . .	104	145	105	177	101	170	802	99	189	184	175	155
Dearborn .	139	135	106	104	113	211	808	142	150	177	154	185
Dorchester	200	151	176	108	112	137	884	135	177	215	163	194
Dwight . .	49	58	39	44	40	45	275	47	52	78	52	46
Eliot . . .	103	122	112	114	95	172	718	107	203	171	120	117
Everett . .	76	76	73	93	97	103	518	85	92	110	107	124
Franklin .	30	33	41	38	42	49	233	22	52	71	54	34
Hancock .	118	118	103	166	147	182	834	159	207	206	125	137
Lawrence .	87	82	79	72	111	100	531	86	108	139	113	85
Lewis . . .	81	90	65	62	79	100	477	57	97	134	86	103
Lincoln . .	94	90	95	77	96	121	573	55	117	157	125	119
Lyman . .	61	60	48	40	45	50	304	33	71	62	68	70
Mayhew . .	59	51	31	37	39	76	293	47	72	53	51	70
Norcross .	110	93	87	81	111	152	634	120	117	158	111	128
Phillips . .	53	54	35	38	26	73	279	49	59	56	40	75
Prescott . .	72	52	67	78	71	97	437	74	78	109	73	103
Quincy . .	71	61	67	55	67	82	403	80	80	102	77	64
Rice	36	64	51	47	41	106	345	74	63	84	70	54
Sherwin . .	118	128	85	65	78	100	574	111	131	115	110	107
Shurtleff .	94	101	93	94	86	127	595	74	150	160	116	95
Washington	63	54	50	45	41	63	316	59	70	81	63	43
Wells . . .	61	77	68	62	72	121	461	98	107	118	87	51
Winthrop .	66	56	25	53	69	79	348	67	99	79	54	49
Training .	6	....	6	12	12	8	44	1	12	12	11	8
Totals . .	2,447	2,390	2,184	2,209	2,235	3,145	14,610	2,355	3,288	3,531	2,725	2,711

PRIMARY SCHOOLS — DORCHESTER.

Abstract of Semi-Annual Returns, January 31, 1872.

SUB-DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole number at date.
		Boys	Girls	Total	Boys	Girls	Total					
Atherton	1	20	22	42	18	17	35	7	83.0	23	18	41
Everett	3	78	56	134	67	45	112	22	84.1	73	57	130
Gibson	2	30	31	61	27	26	53	8	86.5	28	30	58
Harris	3	82	80	162	72	69	141	21	86.1	66	98	164
Mather	3	80	77	157	64	67	131	26	83.5	111	56	167
Minot	3	58	79	137	51	66	117	20	85.5	76	62	138
Stoughton	3	70	65	135	66	59	125	10	91.4	54	82	136
Tileston	1	15	13	28	14	12	26	2	93.2	26	5	31
Stoughton, Intermediate	1	21	11	32	20	10	30	2	93.0	19	12	31
Totals	20	454	434	888	399	371	770	118	89.6	476	420	896

PRIMARY SCHOOLS — DORCHESTER.

Abstract of Semi-Annual Returns, August, 1872.

SUB-DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole number at date.
		Boys	Girls	Total	Boys	Girls	Total					
Atherton	1	17	15	32	13	10	23	9	70.0	25	10	35
Everett	3	75	55	130	63	44	107	23	82.0	59	62	121
Gibson	2	35	29	64	32	22	54	10	85.5	29	35	64
Harris	3	69	60	129	61	51	112	17	86.6	92	58	150
Mather	3	74	74	148	62	60	122	26	82.0	129	55	184
Minot	3	66	82	148	59	66	125	23	84.0	93	50	143
Stoughton	3	70	57	127	62	49	111	16	87.0	51	64	115
Tileston	1	17	13	30	16	12	28	2	92.0	29	6	35
Stoughton, Intermediate	1	18	13	31	17	11	28	3	91.0	20	17	37
Totals	20	441	398	839	385	325	710	129	84.4	527	357	884

CLASSIFICATION OF PRIMARY SCHOOLS, AUGUST, 1872.

DISTRICTS.	SCHOOLS HAVING							
	One Class.	Two Classes.	Three Classes.	Four Classes.	Five Classes.	Six Classes.	1st Class only.	6th Class only.
Adams	6	3	...	...	...	...	1	1
Bigelow	12	...	...	1	...	...	2	2
Bowditch	7	3	...	...	...	...	2	2
Bowdoin	1	6	2	...	2	...	...	1
Boylston	...	6	...	...	...	1	...	...
Brimmer	10	1	...	...	1	...	1	2
Chapman	8	2	...	...	...	...	1	2
Comins	9	4	2	...	...	1	1	2
Dearborn	15	2	...	...	...	...	3	3
Dwight	6	...	...	...	...	...	1	2
Eliot	13	...	2	...	1	...	2	3
Everett	8	2	...	...	...	...	1	2
Everett (Dorchester)	...	3	...	...	...	...	...	...
Franklin	6	...	...	...	...	...	1	1
Gibson	...	2	...	2	...	...	...	...
Hancock	3	12	3	...	...	1	...	1
Harris	1	1	1	...	...	...	1	...
Lawrence	11	1	...	...	...	...	2	2
Lewis	1	3	6	...	...	...	...	1
Lincoln	8	2	...	1	...	...	1	2
Lyman	6	...	...	1	...	...	1	1
Mayhew	...	4	3	...	...	...	...	...
Mather	1	1	1	...	...	...	1	...
Minot	1	1	1	...	...	...	1	...
Norcross	9	3	1	...	1	...	2	2
Phillips	...	3	3	1	...	...	...	...
Prescott	3	5	...	1	...	...	...	1
Quincy	10	1	...	...	...	...	2	2
Rice	4	6	...	...	...	...	1	2
Sherwin	4	7	...	...	...	1	2	...
Shurtleff	13	...	...	...	...	...	2	3
Stoughton	...	3	...	1	...	...	...	...
Tileston	...	...	...	1	...	...	...	...
Training	...	...	...	...	1	...	...	...
Washington	2	5	...	...	...	...	1	...
Wells	8	3	...	...	1	...	1	2
Winthrop	7	2	...	...	...	...	1	2
Totals	193	97	25	9	7	4	35	44

SCHOOL CENSUS.

Table showing the number of children in each Ward between five and fifteen years of age, and the number at school, May, 1872, *as reported by the census-taker.*

WARDS.	Children between 5 and 15.	Attending Public Schools.	Attending Private Schools.
1	5,146	3,632	869
2	4,742	3,452	365
3	1,936	1,434	183
4	915	550	203
5	1,960	1,638	22
6	1,592	1,041	344
7	6,128	4,696	877
8	1,438	1,143	99
9	1,970	1,429	296
10	2,102	1,608	168
11	2,720	1,892	509
12	4,909	3,660	562
13	1,981	1,640	85
14	2,388	2,068	111
15	3,476	2,938	178
16	2,456	2,078	131
Deer Island,	185	185	....
Thompson's Island,	100	....	100
Total,	46,144	35,084	5,102

TABLE

SHOWING THE NAMES AND LOCATIONS OF GRAMMAR SCHOOL-HOUSES, EXCLUSIVE OF THOSE IN DORCHESTER, SIZE OF LOTS, VALUE OF PROPERTY, NUMBER OF SEATS, ETC., MARCH 1, 1872.

Names of Schools.	Location.	When Institu'd.	House Built.	How Warmed.	Size of Lots. Square feet.	Value of Houses and Lots.	No. of Stories.	No. Sch'l rooms.	No. of Seats.	Seating capacity of Halls. [About.]	No. of Pupils.	No. of Teachers.
Adams	East Boston.	1856	1856	Furnaces.	14,100	$64,287 30	4	18	1008	500	571	12
Bigelow	South Boston.	1849	1850	Furnaces.	12,660	68,447 50	4	14	784	500	976	20
Bowditch	South street.	1861	1862	Furnaces.	12,006	113,546 40	4	14	784	500	548	14
Bowdoin	Myrtle street.	1821	1848	Furnaces.	4,892	57,640 00	.	6	587	. .	548	12
Boylston	Washington street.	1869	. .	Furnaces.	15,073	153,022 10	3	8	597	. .	446	11
Brimmer	Common street.	1844	1843	Furnaces.	11,097	91,968 80	4	14	784	400	694	16
Chapman	East Boston.	1849	1850	Furnaces.	13,040	53,253 20	3	10	560	500	624	12
Comins	Tremont street.	. .	1856	Steam.	23,780	73,469 00	4	13	728	600	934	17
Dearborn	Dearborn place.	1852	1852	Steam.	38,638	106,899 76	3	14	784	700	800	16
Dudley	Bartlett street.	1839	1846	Furnaces.	7,950	31,638 75	3	6	336	. .	290	7
Dwight	Springfield street.	1844	1857	Furnaces.	19,125	92,276 25	4	14	784	500	652	13
Eliot	North Bennet street.	1713	1838	Furnaces.	11,077	83,363 23	4	14	784	500	824	16
Everett	Northampton street.	1860	1860	Furnaces.	32,409	99,934 89	4	14	784	500	710	15
Franklin	Ringgold street.	1785	1859	Furnaces.	16,439	92,365 07	4	14	784	500	683	15
Hancock	Parmenter street.	1822	1847	Furnaces.	28,197	119,785 05	4	14	784	500	926	19
Lawrence	South Boston.	1844	1356	Steam.	14,343	75,177 30	4	14	784	500	937	18

Lewis	**Dale cor. Sherman st.**	1868	1868	**Furnaces.**	27,830	71,981 25	4	12	672	700	. .	12
Lincoln	South Boston.	1859	1859	Furnaces.	17,560	73,992 60	4	14	784	500	827	15
Lyman	East Boston.	1837	1846	Steam.	26,200	114,408 80	3	14	784	600	520	12
Mayhew	Hawkins street.	1803	1847	Furnaces.	9,625	62,562 50	3	10	560	250	526	13
Norcross	South Boston.	1868	1868	Steam.	12,075	82,582 50	4	12	672	700	726	15
Phillips	Phillips street.	1844	1862	Furnaces.	11,190	88,415 25	4	14	784	500	621	13
Prescott	East Boston.	1865	1865	Steam.	39,952	102,905 44	3	16	896	600	669	13
Quincy	Tyler street.	1847	1847	Furnaces.	11,776	84,340 85	4	14	784	500	634	14
Rice	Dartmouth street.	1867	1869	Steam.	27,125	151,983 15	3	14	784	700	682	15
Sherwin	Windsor street.	1870	1870	Steam.	32,040	139,471 20	3	16	896	700	875	18
Shurtleff	South Boston.	1869	1869	Steam.	41,000	132,547 80	3	14	784	600	724	14
Washington . . .	Washington street.	1849	18	Furnaces.	14,390	43,989 00	3	7	287	. .	271	7
Wells	Blossom street.	1833	1868	Steam.	17,657	121,315 15	4	10	560	600	474	11
Winthrop	Tremont street.	1836	1855	Furnaces.	15,078	202,952 20	4	14	784	500	857	18

TABLE

Showing Names and Locations of High School-houses, Size of Lots, Value of Property, Number of Seats, etc., March, 1872.

Names of Schools.	Location.	When Instituted.	Houses built.	How warmed.	Size of Lots. Square ft.	Value of Houses and Lots.	No. of Stories.	No. of School-rooms.	No. of Seats.	Seating capacity of Halls.	No. of Pupils.	No. of Teachers.
Latin School.	Bedford street.	1635	1844	Furnaces.	12,980	$245,014 00	4	6	240	300	222	11
English High-School. .	Bedford street.	1821						6	240	300	541	17
Girls' High and Normal	W. Newton st.	1852	1870	Steam.	30,520	279,400 00	3	*14	1,160	700	622	23
Highlands High.	Kenilworth st.	. .	1861	Furnaces.	6,667	29,260 28	4	4	160	. .	206	6
Dorchester High.	Dorchester av.	. .	1870	Steam.	59,340	69,984 42	3	6	210	400	132	5

* 24 recitation-rooms.

TABLE

Showing the Names and Locations of the Dorchester District School-houses, Size of Lots, Value of Property, Number of Seats, etc., March 1, 1872.

Names of Schools.	Location.	When Instituted.	Houses built.	How warmed.	Size of Lots. Square ft.	Value of Houses and Lots.	No. of Stories.	No. of School-rooms.	No. of Seats.	Seating capacity of Halls.	No. of Pupils.	No. of Teachers.
Atherton	Columbia st.	. .	1868	Furnaces.	4,727	$3,159 97	1	1	50	. .	44	1
Everett	Summer st.	. .	1855	Furnaces.	29,300	27,788 75	2	7	350	. .	193	5
Gibson	School st.	. .	1857	Furnaces.	44,800	29,612 00	2	6	300	. .	121	4
Harris.	Adams st.	. .	1861	Furnaces.	37,150	39,805 70	3	8	400	. .	212	5
Mather	Meet'g H. Hill.	. .	1856	Furnaces.	. . .	19,889 10	. .	7	350	. .	246	6
Minot	Walnut st.	. .	1856	Furnaces.	16,790	21,250 90	2	7	350	. .	. .	4
Stoughton	River st.	. .	1856	Furnaces.	29,725	29,603 75	2	6	300	. .	151	5
Tileston	Norfolk st.	. .	1853	Furnaces.	86,640	52,069 40	3	8	400	. .	84	3

The following Table shows the number of persons in the city between the ages of five and fifteen, in the month of May, for ten years, and also the amount received by the city, in each year, from the State School Fund: —

YEARS.	Persons between Five and Fifteen Years of Age.	Proportion of Income from School Fund.
1863	32,147	6,364 99
1864	32,854	6,430 63
1865	34,902	6,750 44
1866	35,225	8,082 08
1867	36,030	5,310 30
1868	43,109	11,545 13
1869	42,624	8,171 38
1870	46,301	7,226 79
1871	45,970	12,015 14
1872	46,144	9,363 24

The following Table shows the average whole number, the average attendance and the per cent. of attendance, of the PUBLIC DAY SCHOOLS, *of all grades, for ten years, ending August* 31, 1872: —

YEARS.	Average Whole Number.	Average Attendance.	Per Cent.
1862–63	27,051	24,516	90.6
1863–64	26,961	24,617	91.6
1864–65	27,095	25,001	93.0
1865–66	27,723	25,809	93.5
1866–67	28,126	26,265	94.0
1867–68	32,385	30,399	92.7
1868–69	33,535	31,126	93.3
1869–70	35,164	32,463	92.3
1870–71	36,174	33,464	92.5
1871–72	36,234	33,502	92.4

The following Table shows the aggregate of the average whole number and attendance of the pupils of the High Schools, *for ten years, ending August* 31, 1872: —

Years.	Average Whole Number.	Average Attendance.	Per cent.
1862–63	733	696	94.9
1863–64	527	691	94.5
1864–65	740	712	96.1
1865–66	776	751	96.2
1866–67	873	845	96.7
1867–68	1,050	977	95.7
1868–69	1,064	1,025	95.7
1869–70	1,283	1,230	95.9
1870–71	1,501	1,430	95.2
1871–72	1,640	1,553	93.8

The following Table shows the aggregate of the average whole number and attendance of the Grammar Schools, *for ten years, ending August* 31, 1872: —

Years.	Average Whole Number.	Average Attendance.	Per cent.
1862–63	13,347	12,439	93.1
1863–64	13,523	12,601	92.8
1864–65	13,915	13,110	93.8
1865–66	14,394	13,620	94.2
1866–67	14,849	14,026	94.1
1867–68	17,450	16,362	93.3
1868–69	18,043	16,963	93.9
1869–70	19,028	17,807	93.2
1870–71	19,565	18,312	92.3
1871–72	19,760	18,500	92.8

The following Table shows the aggregate of the average whole number and attendance of the pupils of the PRIMARY SCHOOLS, *for ten years, ending August* 31, 1872.

YEARS.	Average Whole Number.	Average Attendance.	Per Cent.
1862–63	12,971	11,412	89.4
1863–64	12,713	11,325	87.5
1864–65	12,440	11,179	89.1
1865–66	12,553	11,438	90.3
1866–67	12,405	11,393	91.1
1867–68	14,385	13,060	89.3
1868–69	14,384	13,101	90.4
1869–70	14,739	13,330	90.4
1870–71	14,977	13,614	89.4
1871–72	14,716	13,351	89.8

The following Table shows the number of PRIMARY SCHOOLS, *the average number and the average attendance to a school, for ten years, ending August* 31, 1872.

YEARS.	Schools and Teachers.	Average No. to a School.	Average Attend. to a School.
1862–63	264	51.0	45.0
1863–64	254	50.0	44.5
1864–65	257	48.4	43.5
1865–66	256	49.0	44.7
1866–67	259	47.8	43.0
1867–68	303	47.4	43.1
1868–69	307	46.8	42.6
1869–70	323	45.9	41.2
1870–71	327	45.8	41.6
1871–72	335	43.9	39.8

ORDINARY EXPENDITURES.

Annual Expenditures for the Public Schools of Boston for the last eighteen financial years, ending 30th of April, in each year, exclusive of the cost of the school-houses; also the average whole number of scholars for each school year ending August 31, 1872.

Financial Year.	No. of Schola's.	Salaries of Teachers.	Rate per Scholar.	Incidental Expenses.	Rate per Scholar.	Total Rate per Scholar.
1854–55..	23,439	$222,970 41	9.51	$62,950 50	2.66	12.17
1855–56..	23,749	224,026 22	9.43	67,380 06	2.84	12.27
1856–57..	24,231	225,730 57	9.32	72,037 71	2.97	12.29
1857–58..	24,732	258,445 34	10.45	86,849 27	3.51	13.96
1858–59..	25,453	268,668 27	10.56	86,098 21	3.38	13.94
1859–60..	25,328	277,683 46	10.96	95,985 15	3.79	14.75
1860–61..	26,488	286,835 93	10.82	111,446 31	4.21	15.03
1861–62..	27,081	300,181 28	11.08	108,245 06	4.00	15.08
1862–63..	27,051	310,632 43	11.50	115,641 97	4.27	15.77
1863–64..	26,960	324,698 51	12.04	140,712 56	4.85	16.89
1864–65..	27,095	372,430 84	13.74	180,734 00	6.67	20.41
1865–66..	27,723	403,300 82	14.54	172,520 76	6.22	20.77
1866–67..	28,126	492,796 66	17.52	186,908 85	6.64	24.16
1867–68..	32,885	548,615 90	16.68	224,090 51	6.81	23.49
1868–69..	33,535	719,628 04	21.45	263,048 96	7.84	29.29
1869 70..	35,164	720,960 65	20 50	226,451 95	7.57	28.07
1870–71..	36,174	816,344 66	22.11	315,254 70	8.71	30.82
1871–72..	36,234	863,658 81	23.83	352,920 84	9.74	33.57

TOTAL EXPENDITURES.

Table showing the net TOTAL *expenses of the city, for Education, for eighteen years, from May* 1, 1854, *to April* 30, 1872, *inclusive.*

Financial Year.	Salaries of Teachers.	Incidental Expenses.	Cost of School-houses.	Total Expenditure.
1854–55........	$222,970 41	$62,350 50	$103,814 73	$389,135 64
1855–56........	224,026 22	67,380 06	149,732 80	411,139 08
1856–57........	225,730 57	72,037 71	51,299 26	349,067 54
1857–58........	258,445 34	86,849 27	225,000 00	570,294 61
1858–59........	268,668 27	86,098 21	105,186 42	459,952 90
1859–60........	277,683 46	95,985 15	144,202 67	517,871 28
1860–61........	286,835 93	111,446 31	230,267 04	628,549 28
1861–62........	300,181 28	108,245 06	166,181 50	574,567 84
1862–63........	310,632 43	115,641 97	107,812 74	534,087 14
1863–64........	324,698 51	140,712 56	5,870 87	471,281 94
1864–65........	372,430 84	180,734 00	90,609 84	643,774 68
1865–66........	403,300 82	172,520 76	200,532 64	776,375 22
1866–67........	492,796 66	186,908 85	101,575 09	781,280 60
1867–68........	548,615 90	224,090 51	188,790 80	961,497 51
1868–69........	719,628 04	263,048 96	346,610 78	1,329,287 78
1869–70........	720,960 65	266,451 95	612,337 86	1,599,750 46
1870–71........	816,344 66	315,254 70	443,679 71	1,575,279 07
1871–72........	863,658 81	352,920 84	97,800 68	1,314,380 33

REPORT

OF THE

STANDING COMMITTEE

ON

MUSIC.

REPORT OF THE COMMITTEE ON MUSIC.

In School Committee, Dec. 10, 1872.

The Committee on Music respectfully submit the following

REPORT.

In their more recent official communication to this Board your Committee have unfolded, with some minuteness, the plan and purpose of musical instruction as it is now pursued in the Boston Public Schools, sketching in outline the origin, progress and scope of such instruction, explaining its progressive steps and methods throughout the various grades of Primary, Grammar and High School pupilage, and exhibiting, to a limited extent, the results which are already being accomplished.

During the past year a gratifying advance has been made in this specialty of our public instruction. This is manifest in the greater interest exhibited on the part of the pupils, in the more systematic and efficient instruction given by the regular teachers, and in the unanimity and harmony of action which prevails throughout the corps of professional instructors. All this will further appear in the several communications made to this Committee by the professional teachers of music, and which, as showing more minutely and definitely the present condition and the practical working of this department, we have embodied at considerable length in this report.

In the Primary Schools, now 335 in number, your Committee have found, in their recent visits, that it is the rare exception to meet with a teacher who is not able intelligently and satisfactorily to impart to the pupils the requisite instruction in music. The following is the revised programme of this instruction (in conformity with the recently adopted text-book), a copy of which programme, in the form of a circular, has been placed in the hands of every teacher.

REVISED PROGRAMME OF ELEMENTARY INSTRUCTION IN SINGING FOR THE BOSTON PRIMARY SCHOOLS.

Requirements for the First Year (Sixth and Fifth Classes).

SIXTH CLASS. — 1. Pupils shall be taught to sing *by rote* all the songs and exercises with words through the first fourteen pages of the "First National Music Reader."

2. They shall be taught to sing the scale, ascending and descending, at a convenient pitch (in about the Key of D), by the scale names, One, Two, Three, Four, Five, Six, Seven and Eight, represented by the numerals, 1, 2, 3, 4, 5, 6, 7, 8; also to sing the same by the syllables, Do, Re, Mi, Fa, Sol, La, Si and Do.

3. Pupils are to practise from the numerals at the bottom of Chart No. 1, being made to understand that a comma, after a figure, means to sing a short sound, and a dash means to sing a long sound.

4. They shall be taught to sing *by rote* the following songs: —
"At Home and Abroad," page 55.
"Fido and his Master," page 81. (Transpose to C.)
"Pussy Knows," page 86. (Transpose to G.)

5. The teacher should be able to report, when her pupils are

transferred to the Fifth Class, the number who can sing the scale alone, and those who cannot, and to furnish a list for the teacher to whom they are transferred.

6. Other songs *by rote* at the discretion of the teacher.

7. Teachers are respectfully referred to Chapter VIII, page 16, of the National Music Teacher, as to "Exercise Songs," singing while marching, etc.

Fifth Class. — 1. In addition to the requirements of the Sixth Class, pupils of the Fifth Class shall be taught musical notation to the extent indicated on Chart No. 2, according to the "Illustrated Lessons" I, II, III, IV, V, VI and VII. (Using the syllables synonymous with the scale names.)

2. Degrees of loudness, *mf*, *f* and *p*, and the Repeat, from Chart No. 3, Exercises 1, 2 and 3, "Lesson" VIII.

3. Go on in daily practice from the Charts to the bottom of Chart No. 6, according to "Illustrated Lessons" IX to XIV, inclusive.

4. The following songs, *by rote:* —

"The Rising Sun," page 26.

"Spring Song," page 24 (may be transposed to D or E flat).

"Rest of the Flowers," page 30.

5. Other songs at the discretion of the teacher.

6. Teacher to report the number of pupils who can sing the scale, and those who cannot, on being transferred to the Fourth Class.

7. See remarks as to "Exercise Songs," etc., page 16 of the National Music Teacher.

Requirements for the Second Year (Fourth and Third Classes).

Fourth Class. — 1. Review the requirements of the Fifth and Sixth Classes, the pupils using the First Music Reader (See Preface, or "To Teachers," third paragraph), and in addition to the same proceed to the bottom of Chart No. 12, carefully instructing the pupils according to Illustrated Lessons XV to XXI inclusive.

2. Rote songs — pages 15, 16 and 17 — being very careful as to the dotted quarter note.

"Forget Me Not," page 56.

"Speak Gently," page 36.
"Out in the Air," page 32.

3. Other songs at the discretion of the teacher.

4. Teacher to report, on transfer to the Third Class, the number of pupils who can sing the scale, and those who cannot, also the pupils who can sing one song alone from the First Music Reader.

5. See remarks as to Exercise Songs, etc., page 16, "National Music Teacher."

6. Exercise pupils daily upon the sounds of the Scale, with the Manual Signs in about the Key of C or D.

THIRD CLASS — 1. Review the work of the three lower classes, pupils using the First Music Reader; and proceed on Charts to bottom of No. 15, as indicated in Lessons XXII, XXIII and XXIV of the National Music Teacher.

2. Rote songs: —

"Autumn Song," page 80.
"My Lamb," page 59.
"The Violet," page 74.

3. Exercise daily upon the sounds of the Scale with the Manual Signs.

4. Other songs *by rote* at the discretion of the teacher.

5. On transfer to the Second Class the teacher should be able to report the number of pupils who can sing the Scale, and those who cannot, also the number who can sing alone one song from the First Music Reader.

6. See remarks as to "Exercise Songs," etc., page 16 of the National Music Teacher.

Requirements for the Third Year (Second and First Classes).

SECOND CLASS. — 1. Review the work of the four lower classes from the First Music Reader; go on with Charts to bottom of No, 20, according to Illustrated Lessons XXV to XXVIII.

2. Rote songs: —

"My Flower," page 71.
"Nature gives no Sorrow," page 65.
"Love of Country," page 37.

3. Pupils to be taught with great care, Chart No. 16, according

to illustrated Lesson XXVI of the National Music Teacher; also Chart No. 17.

4. Pupils are to be taught the Middle, Upper and Lower Scales from Chart No. 18, according to Illustrated Lesson No. XXVII; to name the fifteen different pitches and tell readily the position of each pitch upon the Staff.

5. Daily exercises upon the Scale with the Manual Signs.

6. The teacher is to ascertain and keep a record of the compass of the voice of each pupil.

(*a*) The number who can sing alone the Scale in the Key of C.

(*b*) The number who can sing *easily* as high as twice marked *e*, and no higher.

(*c*) The number who can sing *easily* as high as twice marked *g*.

(*d*) The number who can sing to small *a* in the lower Scale.

(*e*) The number who can sing to small *g* in the lower Scale.

7. Other songs and exercises, according to the discretion of the teacher.

8. The teacher is referred to page 16 of the National Music Teacher, to the Chapter on Exercise Songs, etc.

First Class. — 1. Review the entire work of the five lower Classes from the First Music Reader.

2. Proceed through Charts from 21 to 36 inclusive, according to Illustrative Lessons, XXIX to XLII.

In teaching the Charts 21 to 36, the teacher is supposed to be furnished with a Piano-forte or some other good keyed instrument.

By consulting the above programme, every teacher may know definitely what is expected to be taught in each term of the school year; every room is now furnished with its appropriate set of charts and a copy of the National Music Teacher, giving directions how to use these charts in connection with the particular text-book in the series.

Subjoined is Mr. Mason's table, showing the times for the visitation of the scholars under his charge: —

Table showing the times appointed for visiting the Primary Schools of the various districts by the Musical Director for these grades.

Districts.	Days.		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.
Chapman	Monday,	A.M.	16	14	11	9	6	3	3–31	28	26	23
Shurtleff	"	"	23	21	18	16	13	10	10	7	5	2–30
Adams	"	"	30	28	25	23	20	17	17	14	12	9
Norcross	"	"	9	7	4	2–30	27	24	24	21	19	16
Franklin	"	P.M.	16	14	11	9	6	3	3–31	28	26	23
Winthrop	"	"	23	21	18	16	13	10	10	7	5	2–30
Dwight	"	"	30	28	25	23	20	17	17	14	12	9
Bowdoin	"	"	9	7	4	2–30	27	24	24	21	19	16
Prescott	Tuesday,	A.M.	7	15	12	10	7	4	4	1–29	27	24
Lincoln	"	"	24	22	19	17	14	11	11	8	6	3
Lyman	"	"	3	1–29	26	24	21	18	18	15	13	10
Bigelow	"	"	10	8	5	3–31	28	25	25	22	20	17
Brimmer	"	P.M.	17	15	12	10	7	4	4	1–29	27	24
Boylston	"	"	24	22	19	17	14	11	11	8	6	3
Everett	"	"	3	1–29	26	24	21	18	18	15	13	10
Phillips	"	"	10	8	5	3–31	28	25	25	22	20	17
Washington	Wednesday,	A.M.	18	16	13	11	8	5	5	2–30	28	25
Sherwin	"	"	25	23	20	18	15	12	12	9	7	4
Lewis	"	"	4	2–30	27	25	22	19	19	16	14	11
Comins	"	"	11	9	6	4	1–29	26	26	23	21	18
Hancock	Thursday,	A.M.	19	17	14	12	9	6	6	3	1–29	26
Mayhew	"	"	26	24	21	19	16	13	13	10	8	5
Lawrence	"	"	5	3–31	28	26	23	20	20	17	15	12
Eliot	"	"	12	10	7	5	2–30	27	27	24	22	19
Rice	"	P.M.	5	3–31	28	26	23	20	20	17	15	12
Comins	Every Friday from 9 to 12 A.M.		. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Quincy	Saturday,	A.M.	14	12	9	7	4	1	1–29	26	24	21
Bowditch	"	"	22	19	16	14	11	8	8	5	3–31	28
Wells	"	"	28	26	23	21	18	15	15	12	10	7
Remote Districts . . .	"	"	7	5	2–30	28	25	22	22	19	17	14

The following is taken from the special Report of Mr. Mason to the Committee regarding the operation of the department under his charge during the past year: —

> "I am happy to report a decided progress in music in the Primary schools. . . . . I am glad to be able to say that the masters in the several districts are doing all that can be expected of them in their supervision over this department of instruction. Most of them have examined the pupils of the several grades for promotion at the semi-annual examinations. Nothing has so much encouraged the teachers in the performance of their part of the work as these examinations. Several of the masters have expressed themselves as well pleased with the results of our efforts in this province of school work, and have acknowledged to me the beneficial influence of such training of the voice and ear in the reading and other recitations. No one can see better than I can where improvements may yet be made, and I shall be most happy, with the assistance of my associate directors, the masters and the regular teachers, to carry out any changes which the Committee, from year to year, may suggest."

It may be proper to refer here to the fact that since the organization of the present force of special musical instructors, the number of Primary Schools has greatly increased, and their field of operations, by annexation and otherwise, been greatly extended. Of course, under this condition of things, the duty of the Musical Director, in this department, can be only supervisory. The time has come when the question of providing him with duly qualified assistants ought to be taken into serious consideration. During a considerable portion of the past year Mr. Mason has been assisted in his active work by his two daughters, who have laboriously and faithfully rendered their aid, and that without compensation from the city.

In the Grammar Schools the classes are divided for musical instruction into two grand divisions, the four lower classes comprising the First, and the two upper the Second division. The following is the programme of instruction recently recommended by the Committee for the division comprising the four lower classes, as above stated, and will show the progressive character of this teaching:—

PROGRAMME OF THE INSTRUCTION IN MUSIC FOR THE LOWER CLASSES OF THE BOSTON GRAMMAR SCHOOLS.

Requirements for the First Year (Sixth Class) of the Grammar Course.

1. — Pupils shall be taught the exercises and songs found in the first twenty pages of the Music Charts, second series.

2. — They shall be taught all the exercises and songs contained in the first thirty-three pages of the Second Music Reader.

3. — They shall be taught the different forms of measure therein used, and be able to beat the time correctly while singing.

Requirements for the Second Year (Fifth Class).

1. — This class will commence with the reversed pages of the charts, and shall be able to sing the chromatic scale with syllables (do, re, mi, etc.), scale-names and pitch-names.

2. — They shall be taught all that is contained on the Charts Nos. 21 to 40 inclusive.

3. — They shall be able to write properly the different scales, and name the pitch of the sounds of which each scale is composed.

4. — They must be able to beat the time correctly in all the exercises.

5. — They shall review, from time to time, the same music, using their books, and shall acquire at least one additional song in each key.

6. — Other songs, at the discretion of the teacher.

Requirements for the Third Year (Fourth Class).

1. — This class shall begin upon the Third Series of Charts. They shall be taught to know the intervals, to the extent of the major and minor seconds, major and minor thirds, perfect and augmented fourths, perfect and diminished fifths.

2. — They shall be taught all the music found on the first twenty numbers of this series of Charts; also all the music contained on the first twenty-two pages of the Third Music Reader.

3. — They shall be taught to beat the time correctly in all the exercises and songs.

Requirements for the Fourth Year (Third Class).

1. — This class will commence with the reverse pages of the Third Series of Charts, and complete the set.

2. — They shall be taught the names of the common harmonics, on the different degrees of the scale, viz.: — the tonic, dominant, sub-dominant, and dominant seventh.

3. — They shall review this music from the books, and shall acquire at least one additional song in each key.

4. — Other songs, at the discretion of the teacher.

The above programme contains, it will be seen, hints and suggestions for the guidance of the teachers of the several classes rather than a full exposition of what shall be taught. This must, of course, be left in a great measure to the discretion of the Musical Director of this grade. A reference to last year's report of this committee will show more definitely what is attempted to be done, and what is in fact accomplished. Up to this point in the course, the text-books of the newly-adopted series have been placed in the schools, and are giving abundant satisfaction.

We quote the following from the report of Mr. Holt, upon the working of his department: —

"Many schools have made a decided advance upon the previous year; still the improvement has not been so uniform throughout the city as I had hoped. A general and steady advancement is seen in every school where the allotted time is taken and faithfully devoted to this study. This is done in most of the schools — I am sorry to say not conscientiously and scrupulously in all. It is the gradual accumulation, gained from the practice of every day, that makes success easy and certain. I think the time has come when we should have a definite programme for each class, upon which they should be examined for promotion, as in the other studies. This must be done before I can supervise a work, spread over so large a territory, and in so many classes, and have it uniform.

"The improvement during the past year in the proper management of the voice, and the production of a good quality of tone, has been very marked.

"I cannot close my report without referring to the very general and cordial support and co-operation I have received from the masters and teachers, without which any system of special instruction must be a failure."

The following is the schedule, giving the times for the visitation, by the Musical Director, of the classes of this grade.

Programme of the Times for Visitation in the Four Lower Classes of the Grammar Schools.

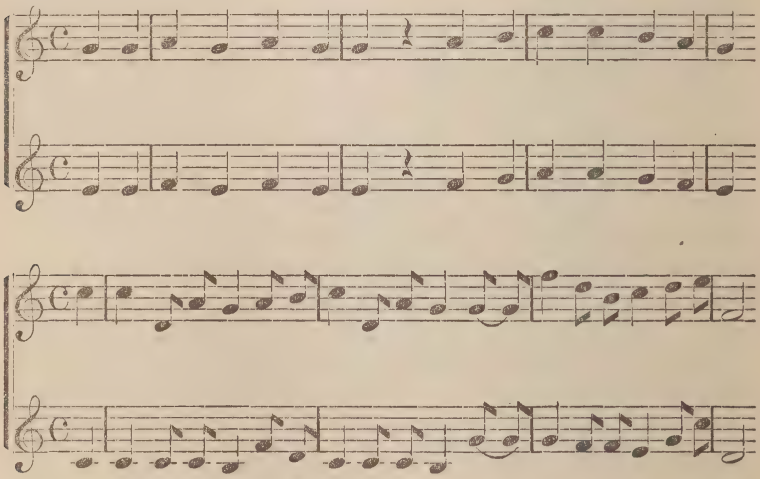
Schools.	Days.		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.
Chapman	Monday,	A.M.	23	14	11	9	6	3	3–31	28	26	23
Prescott	“	“	16	21	18	16	13	10	10	7	5	2
Franklin	“	“	9	28	25	23	20	17	17	14	12	9
Everett	“	“	30	7	4	2–30	27	24	24	21	19	16
Rice	“	P.M.	23	14	11	9	6	3	3–31	28	26	23
Sherwin	“	“	16	21	18	16	13	10	10	7	5	2
Adams	“	“	9	28	25	23	20	17	17	14	12	9
Dwight	“	“	30	7	4	2–30	27	24	24	21	19	16
Brimmer	Tuesday,	A.M.	17	15	12	10	7	4	4	1–29	27	24
Lawrence	“	“	10	22	19	17	14	11	11	8	6	3
Shurtleff	“	“	3	1–29	26	24	21	18	18	15	13	10
Bigelow	“	“	24	8	5	3–31	28	25	25	22	20	17
Winthrop	“	P.M.	17	15	12	10	7	4	4	1–29	27	24
Boylston	“	“	3	1–29	26	24	21	18	18	15	18	10
Quincy	“	“	24	8	5	3–31	28	25	25	22	20	17
Dearborn	Wednesday,	A.M.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Eliot	Thursday,	A.M.	19	17	14	12	9	6	6	3	1–29	26
Mayhew	“	“	12	24	21	19	16	13	13	10	8	5
Hancock	“	“	5	3–31	28	26	23	20	20	17	15	12
Norcross	“	“	26	10	7	5	2–30	27	27	24	22	19
Lincoln	“	P.M.	19	17	14	12	9	6	6	3	1–29	26
Lewis	“	“	12	24	21	19	16	13	13	10	8	5
Dudley	“	“	5	3–31	28	26	23	20	20	17	15	12
Bowditch	“	“	26	10	7	5	2–30	27	27	24	22	19
Wells	Friday,	A.M.	13	18	15	13	10	7	7	4	2–30	27
Lyman	“	“	6	25	22	20	17	14	14	11	9	6
Bowdoin	“	P.M.	13	18	15	13	10	7	7	4	2–30	27
Phillips	“	“	6	25	22	20	17	14	14	11	9	6
Washington	“	“	20	11	8	6	3–31	28	28	25	23	20

Your Committee would again refer to their official report of last year, in which may be found a full account of the course of musical instruction in the two upper classes of the Grammar Schools, which constitute the Second Division of these grades. We are glad to make the following extracts from Mr. Sharland's report: —

"During the year the classes under my charge have made good progress in the following points, viz.: — Musical Theory, Purity of Tone, Distinctness of Articulation, Time, Rhythm and Accent, the Dynamics of Music, Reading at Sight and Singing under the baton. Musical Theory has been taught by a careful review of their previous work, with practical examples upon the blackboard, and daily practice under the regular teachers upon the charts (Fourth Series). This chart is intended to familiarize the pupils with the scale of C and its intervals, giving the power to sing the same in two parts.

EXAMPLE.

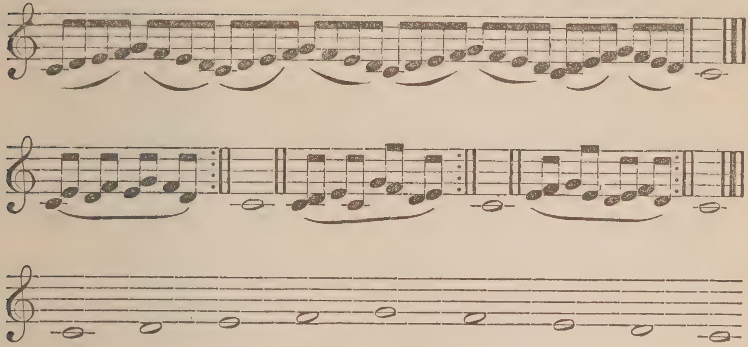
Andante. *Hullah.*



"The subject of purity of tone and distinctness of articulation has been presented in the form of brief lectures on the organs involved in the production of tone and the reflection and distinct enunciation of the same, coupled with practical exercises.

EXAMPLE.

Streeter.

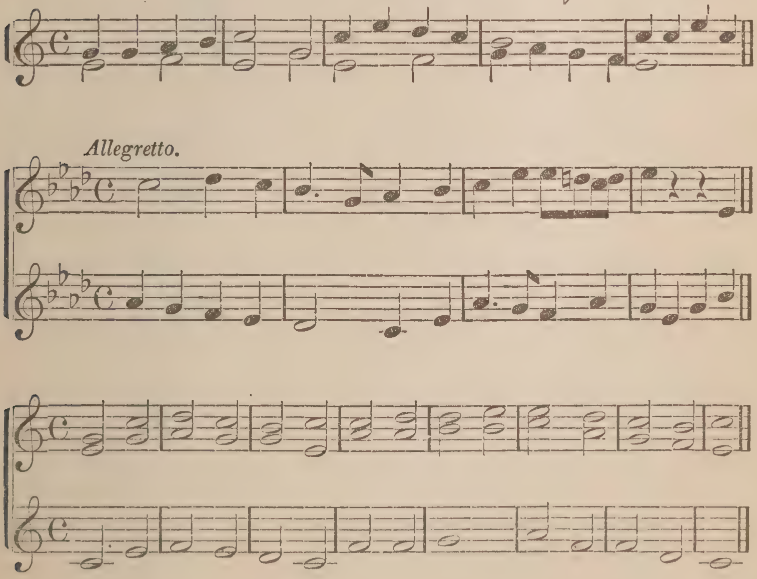


A — as in bay, bar, ball, bat.
E — as in bee, bed.
I — as in time, tin.
O — as in tone, top.

"Frequent practice in the reading of music, by syllables, has been resorted to. This, it is believed, compels, to a considerable extent, a knowledge of dynamics, accent, etc. Much benefit has been derived from the constant practice of solfeggios in parts, with rapid change of key, — always singing under the baton, with or without accompaniment.

EXAMPLE.

Key of C through various keys to A♭.



"The want of a music-book, equal to the requirements of the pupils, has occasioned much extra labor, and has retarded, to a considerable extent, the progress of my classes.

"In closing I feel it my duty to commend the faithful efforts of all who are charged with the daily care and instruction of the classes in my department. Masters and teachers have been alike kind and forbearing under their pressure of work, thereby lessening my labor and greatly aiding to bring about the progress claimed in this report."

The times for the visitation of these classes, by the Musical Director, are set forth in the following table: —

Schedule of the times for Visitation of the First and Second Classes of the Grammar Schools.

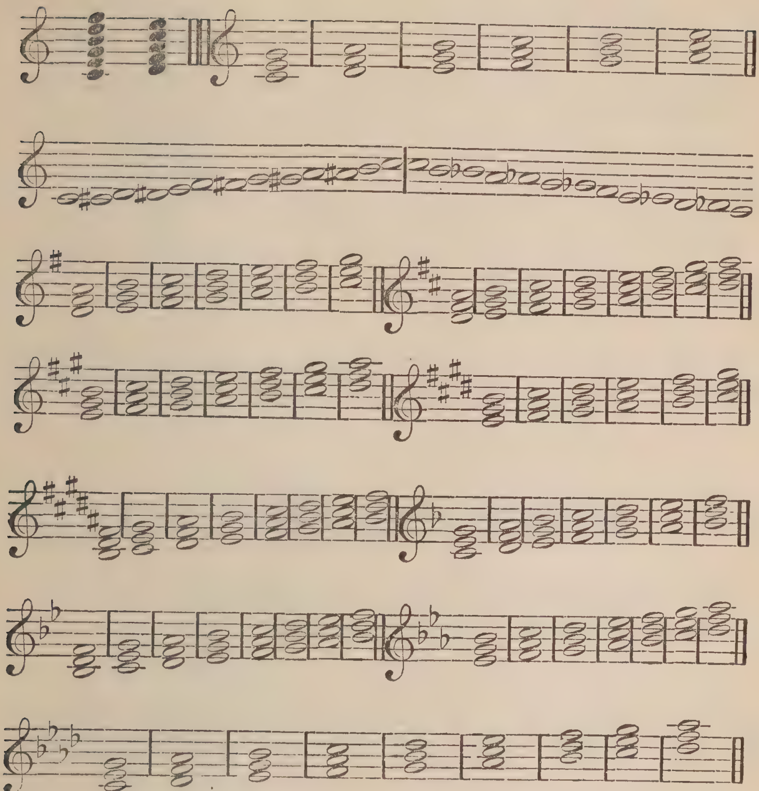
SCHOOL.	DAY.		
Lawrence	Monday	9.15	A.M.
Norcross	Monday	10	"
Bigelow	Monday	10.45	"
Shurtleff	Monday	11.30	"
Lincoln	Monday	3.30	P.M.
Prescott	Tuesday	9.15	A.M.
Chapman	Tuesday	10.	"
Lyman	Tuesday	10.45	"
Adams	Tuesday	11.30	"
Eliot	Tuesday	2.45	P.M.
Hancock	Tuesday	3.30	"
Mayhew	Wednesday	9.15	A.M.
Wells	Wednesday	10	"
Bowdoin	Wednesday	10.45	"
Phillips	Wednesday	11.30	"
Rice	Thursday	9.15	"
Franklin	Thursday	10	"
Winthrop	Thursday	11.30	"
Dwight	Thursday	2	P.M.
Everett	Thursday	2.45	"
Washington	Friday	9.15	A.M.
Dudley	Friday	10	"
Dearborn	Friday	10.45	"
Lewis	Friday	11.30	"
Quincy	Friday	2.15	P.M.
Bowditch	Friday	3.30	"
Sherwin	Saturday	9.15	A.M.
Boylston	Saturday	10.45	"
Brimmer	Saturday	11.30	"

The text-book for these grades is in process of preparation, and is now undergoing the examination of the committee. They hope soon to be ready to recommend its adoption by the Board, when a regularly prescribed programme of study will be devised for the upper, as has already been done for the lower classes of the Grammar and Primary courses.

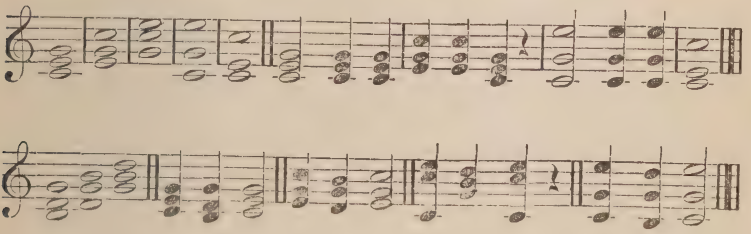
In the Dorchester District the same plan of general instruction is now followed, although for the present the Primary and Grammar grades are under the special charge of an assistant teacher of music, who is subject to the general direction of the supervisors in their several departments. It will no doubt be gratifying to the citizens of this district to learn from the report of Mr. Wilde the progress which has been made under his teaching in the past year: —

"In the district under my charge, the progress has been greater during the past year than in any, or, perhaps, all of the three previous years. The teachers have performed their work better and with more confidence in themselves. Every room is now supplied with charts, and the same system is carried forward which is pursued in all the schools in the city. I have taken great pains to assimilate my work, so that it may conform to the work of Messrs. Sharland, Holt, and Mason, whose classes I have frequently visited.

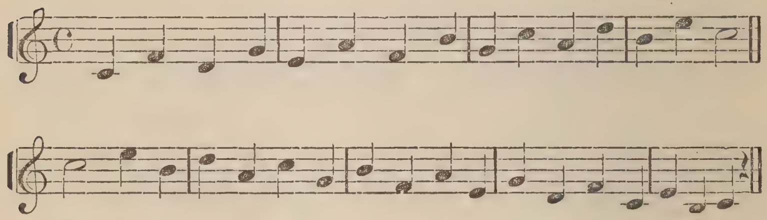
"In the Primary Schools the teachers have carried out the revised programme, and almost all of them have even gone beyond that programme. In the lower classes of the Grammar Schools I have taken up the following exercises, practising the major scale in the nine different keys, with two-part singing in all the major keys, e. g.: —



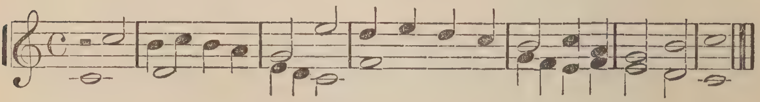
" In the third class I have introduced the triads on the different degrees of the scale, major and minor seconds and thirds, perfect and diminished fifths, and three-part singing, e. g. : —



" In the upper classes the lessons of the preceding years are first carefully reviewed. Then follow the triads of the different keys and studies in the different kinds of measure, such as $\frac{4}{4}$, $\frac{3}{4}$, $\frac{2}{4}$, $\frac{6}{4}$, $\frac{6}{8}$, $\frac{9}{8}$, $\frac{12}{8}$, and practice on the triads of the scales of G, D, A, E, F, Bb, Eb, Ab, Db. After this solfeggios are practised in the above keys, together with frequent practice in the proper use of the voice and respiration, which I consider one of the most important studies that can be introduced to these two classes. The minor scale is here introduced, in both the harmonic and melodic forms, and the relationship to the major scale explained. The terms used by composers, indicating various kinds of movement, are explained, and the following exercises, in different keys, are practised: —



"The pupils are expected to read, at sight, with comparative ease, exercises like the following, in any key: —



"I am glad to say that the classes will compare favorably with those in other parts of the city."

Table showing the times of Visitation to the various Grammar and Primary Schools of the Dorchester District, by the Assistant Teacher for that District.

SCHOOL.	DAY.	
Harris	Monday	9 00 A.M.
Minot	Monday	2.00 P.M.
Mather	Tuesday	9.00 A.M.
Everett	Wednesday	9.00 A.M.
Stoughton	Thursday	9.30 A M.
Stoughton Intermediate	Thursday	12.00 M.
Gibson	Friday	9.00 A.M.
Atherton	Friday	P.M.
Tileston	Saturday	9.00 A.M.

Appended hereunto we add the report of Mr. Eichberg, which, while it confirms what has already been said in regard to the generally satisfactory condition of the musical instruction in the other grades, develops so fully the character and progress of this instruction in the High School Department, that we make no apology for inserting it here at length: —

To J. BAXTER UPHAM, *Chairman of the Committee on Music, in the Boston Public Schools:* —

"I have the honor to submit to you the reports of the Directors and Teachers of Music in the Primary and Grammar Schools. They show a satisfactory degree of progress in the study of this branch of instruction, alike creditable to the special teachers and to the regular instructors upon whom devolves the duty of carrying out most of the work under their direction. Personal observation has convinced me of the growing ability of our regular teachers to instruct music successfully, and I hope, in the near future, that the same mode of teaching, under the supervision of the special teacher of music, may be given at least a trial in the High Schools now under my own instruction.

"In addition to the general supervision of music in all our schools, I am required by the rules to teach in person in all the High Schools. They are five in number, one Girls', two mixed and two Boys' High Schools, viz.: —

The Girls' High School.
Highlands High School.
Dorchester High School.
English High School.
Public Latin School.

The instruction given includes,

A. Cultivation of the Voice.
B. Theory and Harmony.
C. Practice in Singing at Sight.
D. Practice in Part-singing.

"Every candid teacher will agree with me, that the successful tuition of music in the schools is nowhere surrounded by greater difficulties than in the High Schools. The age of most of the pupils renders extreme caution in the treatment of their voices a duty and a sacred obligation. The common belief that boys' voices *alone* require especial care during the period of transition, has led to much loss of voice and of health. Just as important, if less striking, changes occur in the nature and "timbre" of the female voice. I am satisfied that the voice of a girl from twelve to seventeen years of age requires all the more careful management from the very fact, that, not suffering like a boy, from an almost absolute impossibility to sing, she is likely to over-exert herself, to the lasting injury of both health and voice. When teachers are better acquainted with these physiological facts, they will understand the necessity of not sacrificing such young — such temporarily diseased voices — to the desire of exhibiting and showing off their classes.

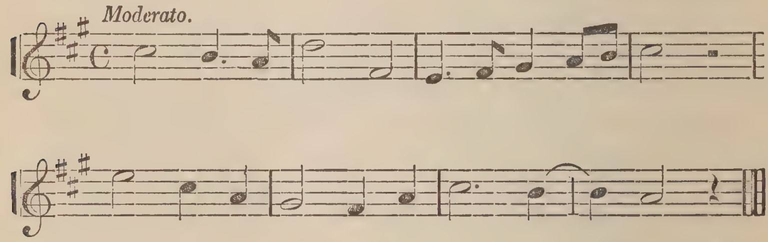
"Another fruitful cause of injury proceeds from the desire of many female pupils always to sing the highest part, — the first soprano. It is with them '*Aut Cæsar, aut nullus.*' Periodical examination of the pupils' voices, by the teacher, has seemed to me the only safe course, in order to remedy this evil. And, in this connection, let me take note of the gratifying fact that the best works of our great composers demand but a limited compass of voice. The old Italian masters, such as Palestrina, Gabrieli and Pergolese, but seldom exceed, in their wonderful choral works, the compass of two octaves and a half, from the bass to the soprano. It has been always my aim to secure beauty rather than strength of tone, satisfied, as I am, that no one can reasonably expect from a young girl of fifteen the ripened vocal powers of a singer perhaps ten years her elder.

"In our Boys' High Schools, we find a general average of fully fifty per cent. of the voices of the pupils in the process of mutation. Consequently the instruction is limited, as it should be, to the study of theory mainly, and to the practice of songs of easy compass for those that are able to sing. I may say that, in spite of these drawbacks, I believe I have succeeded in rendering these lessons profitable and interesting. Short solfeggios, especially written for this purpose, none of the parts exceeding the compass of one octave, have been found very useful, in giving the scholars all needed practice in singing at sight. In a lesson of about fifty minutes' duration, we give, perhaps, fifteen minutes to this practice; the rest is taken up in the study of rhythm, modulation and dictations at the piano, which latter study has grown to be very popular in all our High Schools.

"It gives me pleasure to testify to the constantly increasing interest in our High Schools in the study of music as a science. Since the introduction of the study of thorough-bass in the Girls' High School (senior class), a great progress is obvious in more than one direction. Without such knowledge, the harmonic analyzation of a composition becomes simply impossible; *with* it, the student can vastly better understand the master's meaning — can learn with what simple means great effects are obtained — and can understand, by comparison, that the same laws which govern literary composition find their application in music. Such an insight into a well-written piece of music (and we use none other) quickens the love and the respect for musical art, and endows the pupil with a faculty for pure enjoyments in after life.

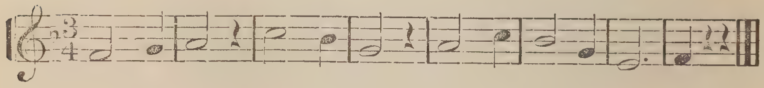
"I have found, and others with me, that the pupils who are most interested in music are generally the most successful in their other studies. This is at least so in our High Schools. It takes but a short time to awaken an interest for the higher study of music in the mind of an earnest pupil. Such an one, upon entering life, will always keep himself well informed in musical matters, and will influence others to do so.

"The *Girls' High School* is divided, for the purpose of musical instruction, into four divisions, two Junior, Middle and Senior. The Junior Classes are reviewed in their Grammar School studies, and have a regular practice in sight-singing, which enables them, at the end of the year, to sing solfeggios, like the following, without much difficulty: —



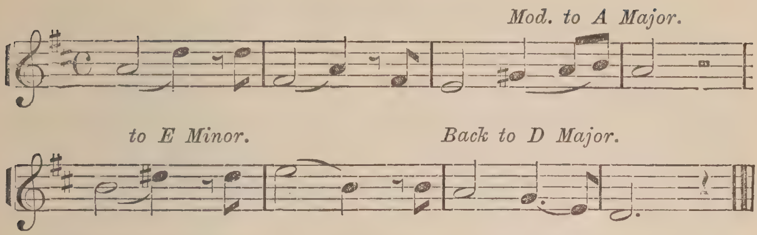
"They are expected to have a full knowledge of all the intervals; to be able to write the major and minor scales correctly, and also to write short melodies, when hearing them played by the teacher.

This melody



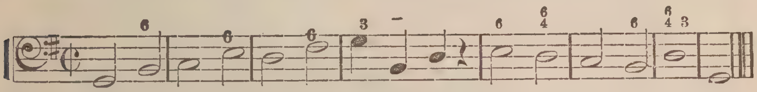
has been written correctly in every respect by as many as fifty-five per cent. of the whole class. We use, for practice in part-singing, selections from the works of Cherubini, Mendelssohn and Rossini.

"The *Middle* Class, in addition to practice in dictation and singing at sight, have to analyze exercises from the standpoint of modulation and construction. The following may serve as a specimen: —



"Pupils are to give reasons for these modulations, and also to know why they lead to A *major* and E *minor*, when nothing in this melody indicates the mode of these changes of key.

"The *Senior* Class receive instruction in elementary harmony in addition to the above-mentioned studies. The figured bass, which I add here, will give some idea of our attempts in this direction:—

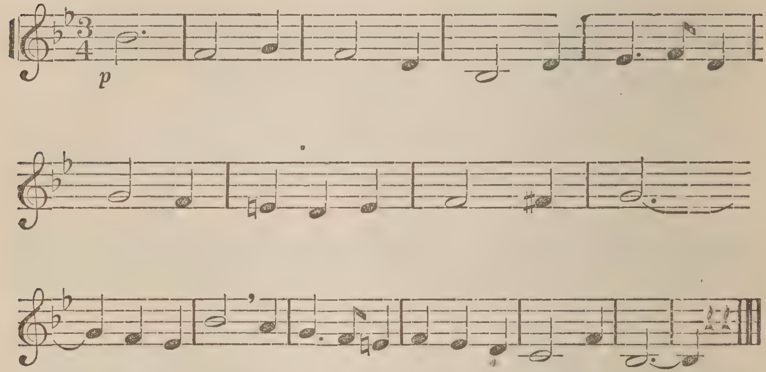


"It will be seen that we have as yet only taken consonant chords and their inversions. The choral studies of both Senior and Middle Classes embrace works by Schubert, Rossini, Cherubini, Bargiel and Mendelssohn. All the classes receive a full course of vocal training, suitable to their age and compass of voice.

"In the *Highlands High School* the instruction is in the main the same as at the Girls' High, but owing to its being a mixed school, we are enabled to practise choruses for soprano, alto, tenor and bass, from the works of good writers. It gives me pleasure to testify to the great interest this school has constantly taken in music, and to the earnestness of purpose that has been a marked feature of the male pupils, who have till recently been altogether excluded from the music lessons. It is perhaps unnecessary to add that great care is taken in the selection of our choruses, and that no boy, in the process of change of voice, is expected to join in the singing, although such pupils are required to be present at the lessons.

"The *Dorchester High School*, like the one previously mentioned, is a mixed school, and its instruction is consequently similar in character. A marked progress has been made during the year, and I fondly anticipate the time when this High School will vie with the others in excellence and interest in matters musical.

"In the *English High* and *Public Latin* Schools, an advanced instruction has been given in the theory and practice of music, for which most of the pupils are well qualified by their previous training in the Grammar Schools. To show how anxiously anything demanding great vocal exertion has been avoided, I will add an exercise in singing at sight, which will serve as an illustration to the above:—



"I can see no possible objection to the use, in these schools, of exercises like this, embracing, as it does, only one octave, and yet giving in this small compass, practice in rhythm, modulation, and, as far as feasible, in vocalization.

All of which is respectfully submitted,

JULIUS EICHBERG,

Gen. Supervisor of Music, and Teacher of Music in the High Schools."

Schedule of Mr. Eichberg's times for Visitation and Instruction in the High Schools.

GIRLS' HIGH SCHOOL.

Tuesday and Friday.

9 o'clock,	Junior Classes, Sect. A—F.
10 "	Junior Classes, remaining Sections.
11 "	Middle Class.
12 "	Senior Class.

HIGHLANDS HIGH SCHOOL.

Monday and Thursday.

9 o'clock, ... Junior Class.
10 " . . . . Middle and Senior Classes.

DORCHESTER HIGH SCHOOL.

Monday.

11.30 o'clock, ... Junior Classes.
12.15 " . . . . . . Middle and Senior Classes.

LATIN SCHOOL.

Saturday.

10 o'clock, ... Entering Class.

ENGLISH HIGH SCHOOL.

Wednesday.

9 o'clock, ... Entering Class.

Saturday.

9 o'clock, ... Upper Classes.

Remaining hours devoted to visiting the lower grades, such as Grammar, Intermediate and Primary Schools.

In the *Normal School*, a thorough course of instruction is given by Mr. Mason, the object of which is to enable the young ladies of that institution to understand and to teach the elements of music in their turn. One hour each week is devoted to such teaching. The lessons are given on Fridays, from one till two o'clock P. M., and, we venture to add, are among the most interesting and useful of all the musical exercises given in the schools.

The development and growth of the musical instruction in the Boston Public Schools has been a matter of time. It is now more than forty years since the first attempts were made towards the introduction of music as a branch of common school education in this city. It was several years after the first agitation of the subject before it existed as a recognized department of study. In 1857 the School Board appointed a Standing Committee on Music, to whom was delegated the especial care of this branch of instruction. But even then, and for several years afterwards, the teaching was mainly confined to the two upper classes of the Grammar, and to the Girls' High and Normal Schools. It was not till July, 1864, that a special instructor in music was furnished for the Primary Schools; only in 1868 was the further step taken of providing a special instructor for the lower classes of the Grammar Schools; and not until the present year has the chain of progressive instruction been completed, by the formal establishment of music, as a recognized branch of study in all the High Schools of the city.

By such slow and gradual steps has this branch of public instruction arrived at its present stage of existence. That it is yet imperfect in many respects, none are so conscious as those whose duty it has been in all these years to watch over and guide its hesitating and painful progress. But, for the simplicity of its plan, for thoroughness of teaching, for good adaptation of means to the end, for abundant and legitimate results, combined with a careful economy of administration, we venture to claim for it, even now, a place beside the best-tried systems of public musical education.

THE FOURTEENTH ANNUAL MUSICAL EXHIBITION of the schools (the fifth of the regular series), took place, under the direction of the Committee on Music, on the twenty-second day of May, at the accustomed hour and place. The performances this year were confined to the pupils of the upper Grammar classes, and a selection from the Latin and High Schools, to the number in all of about twelve hundred.

The attraction of a large and efficient orchestra and the organ was added; the whole under the conductorship of Mr. Eichberg.

The following was the programme: —

I. VOLUNTARY ON THE ORGAN, *by Mr. Sharland.*

II. CHORAL, — "Praise God, ye People," *Nicolaus Hermann.*

Sung in four parts by the Chorus of 1200 Pupils of the High and Grammar Schools.

III. SOLO AND CHORUS (in four parts), *Mendelssohn.*

From the Cantata, "Lauda Sion."

The Soli will be sung by the Pupils of the Girls' High and Normal, Highlands, and Dorchester High Schools.

IV. OVERTURE, — "Jubel," . . . *C. M. von Weber.*

By the Orchestra of the Harvard Symphony Concerts.

V. GLEE, — "Light and Laughing Summer Sky," *Macfarren.*

VI. TRIO, — "The Heaving Billow," . . . *Verdi.*

VII. Sailor Chorus . . . . *Wallace.*

VIII. Overture, — "Semiramide," . . . . *Rossini.*

IX. Chorus of Angels (in four parts), *Sir Julius Benedict.*

From the Legend of St. Cecilia.

Sung by the Pupils of the Girls' High and Normal, Highlands, and Dorchester High Schools.

X. Solo and Chorus, from "Athalie," . *Mendelssohn.*

Soli by the Pupils of the High Schools.

XI. To Thee, O Country, — National Hymn. *J. Eichberg.*

Words by Miss Annie P. Eichberg.

To thee, O country, great and free,
With trusting heart we cling,
Our voices tuned by joyous love,
Thy power and praises sing.
Upon thy mighty, faithful heart
We lay our burdens down;
Thou art the only friend who feels
Their weight without a frown.

For thee we daily work and strive,
To thee we give our love;
For thee with fervor deep we pray,
To Him who dwells above.
O God, preserve our fathers' land,
Let Peace its ruler be;
And let her happy kingdom stretch
From north to south-most sea.

XII. Solo and Chorus . . . . . *J. L. Hatton.*

XIII. The Old Hundredth Psalm.

The performances of this occasion, it is safe to say, fell in no degree behind those of any preceding year; while in some respects they surpassed, in excellence, all former efforts of the kind. For the first time in the history of these festivals, music of the highest order, in four parts (a portion of a cantata of Mendelssohn), was successfully attempted, the boys of the Latin and High Schools taking the tenor and bass parts.

These are always occasions of rare enjoyment, — unique in their kind, most touching and beautiful in their influence on the mind and heart of the listener. For many years these musical exhibitions of the schools have taken place annually in the Music Hall, before crowded and delighted audiences; and they have elicited the highest encomiums from competent judges, whether viewed as a spectacle merely, or an exhibition of the reality and efficiency, the promptness and order which belongs to and is a part of our system of public school instruction, — or as a musical performance of the very highest order of merit. "To witness the assembling and the quiet, reposeful and orderly conduct of the scholars upon the stage, and the brilliant *tableaux* they there present is in itself a sufficient inducement," as Chancellor Barnard once said of it, "for one to travel a hundred miles to see." Add to this that nameless charm which belongs to the young and fresh voices of children singing together in unison or in great harmonic masses, and we have an effect altogether unique and unparalleled.

In conclusion, your committee offer their grateful testimony to the *esprit du corps*, the interest and diligent attention to their duty, and the entire harmony of purpose and of action manifested by the official corps of instructors in this department of our public service during the past year, as well as to the efficient aid and co-operation of the masters and teachers generally, all which have combined to produce the substantial results hitherto attained.

Respectfully submitted,

J. BAXTER UPHAM,
JOHN P. ORDWAY,
R. C. WATERSTON,
CHARLES L. FLINT,
FRANCIS H. UNDERWOOD,
WILLIAM B. MERRILL,
WARREN H. CUDWORTH,
Committee on Music.

REPORT

OF

SCHOOL COMMITTEE

ON

DRAWING.

REPORT.

UNDER the Order of the Board, of June 11th, 1872, the Committee on Drawing present the following Report: —

By the liberal appropriations of the Board, this committee has been able to inaugurate the system of instruction in drawing, which the reports of this department of public instruction for the past two years have endeavored to show the need of. The need of systematic work, competent instructors, and the education of the regular teachers in the schools, was insisted upon in the two previous reports. Acting upon the suggestions of those reports, the Board allowed this committee to appoint a general supervisor, whose technical knowledge of drawing and the proper ways of teaching it, and organizing schools, might enable them to successfully complete their plan. Mr. Walter Smith was appointed, on the recommendation of gentlemen amply competent to judge of his ability and our requirements, and the work of the year has been under his direction. In justice to Mr. Smith, however, it should be stated that he arrived in this country after the term had commenced, and the school work in other branches provided for, and as the instructors in drawing already employed by the city needed information of the new methods Mr. Smith proposed to introduce, much time was lost.

This committee has always insisted upon the importance of requiring the regular teachers to give all the elementary instruction in drawing, and they found Mr. Smith quite ready to adopt this opinion. Classes were organized for the Grammar and Primary teachers at the Appleton-street School, on alternate Wednesdays; and the supervisor, aided by Messrs. Barry, Hitchings, Furneaux and Nutting and Miss Bailey, commenced the teachers' course, of which a synopsis will be given below. The lessons thus received were repeated by the teachers in the schools, and thus, in a few weeks, without in any way interfering with the authorized text-books, new information was imparted to all the pupils. A careful examination was held during the winter, and the results of this course of instruction were found to be highly satisfactory.

The entire work done in the department of drawing may be divided into four classes: first, the instruction in the Primary and Grammar schools, given by the regular teachers; second, that in the High schools, given by the special instructors; third, the instruction of the teachers in the Normal Art School in Appleton street; and, fourth, the free evening classes. The work in each of these classes will be described in order, because for the first time the results have enabled the committee to present to the Board a definite programme, and it is desirable that the Board should be informed on the grounds upon which it is constructed before being called upon to consider it, especially as the Exhibition of Drawings, in May, possibly conveyed a wrong impression of the course already pursued. And here the committee would state that no drawing will be admitted to these exhibitions in future which has not been made in the school by which it is presented, and made in the regular course of instruction of the same year. The committee wholly condemn the practice of preparing special exhibition drawings, either at home or at school, and consider the regular work the only proper subject for exhibition.

PRIMARY SCHOOLS.

The subjects taught are free-hand drawing on slates, from outlines on the blackboard or charts, and the estimation of forms and distances. Under the new programme, the teachers would place on the board graded outlines, and the three lower classes would copy them on slates, while the upper classes copy more difficult subjects on paper or in blank-books. The charts and cards now in use will answer this purpose, if supplemented by the work of the teachers on the board, — especially if the teachers avail themselves of the hand-book of blackboard drawing, soon to be published by Mr. Smith. Memory lessons and dictation exercises are provided for, and the children will commit to memory the definitions of Plane Geometry, as at present in the lower classes of the Grammar schools. Great variety should be given to the exercises in these schools, and the four half-hours each week devoted to them may easily be made, by a competent teacher, opportunities for object-teaching and recreation, without in any way diminishing the value of the instruction.

GRAMMAR SCHOOLS.

Of course most of the work in drawing will be done in the Grammar schools. The lessons proposed are three half-hour exercises each week. One third of the class will draw on the board each lesson. Half of the page of the text-book is to be used in copying the design given by the teacher on the board. The subjects will include free-hand outline of ornament, and objects placed on the board by the teacher; map-drawing, and drawing from the solid model; memory drawing and dictation exercises; geometrical drawing. To carry out properly this plan, each school should be provided with a set of geometrical models and solid forms; and the teachers with dividers, and flat rulers, with inches marked upon them, to aid in the geometrical and perspective work on the board. At present, those schools where the teachers have reproduced the lessons given at the Normal Art School in their own schools, the standing of the classes is quite satisfactory; and it was a very noticeable feature of the exhibition in May that the school which exhibited the best work last year, but which was apparently satisfied with that, and took no part in the Normal lessons, this year was nearly at the foot of the list; where the proper advantage had been taken of the excellent instruction provided by the committee, the work was so much improved as to be noticed by any casual observer of the two exhibitions. The instruction will be given entirely by the regular teachers, and the examinations conducted by the supervisor and special instructors.

HIGH SCHOOLS.

In the Latin School the instruction has been partial, and confined to the lower classes, and so quite elementary. In the High School all the pupils have been under the instruction of the special instructors, Mr. Edward R. Clark having been appointed late in the school year, at the request of the High School committee, to take charge of the instrumental drawing, which was required to fit the pupils for admission to the Institute of Technology. Except for this special purpose, the use of instruments should perhaps be confined to the lower classes. In the Roxbury High School, Mr. Barry was assigned to assist Mr. Nutting, in the early spring. In the Dorchester High School, also, the progress has been satisfactory.

An order has been brought before this Board to appropriate $600 for the purchase of suitable models for the High schools, in accordance with the recommendation of the supervisor of drawing. He says: —

> "I wish to draw the attention of the committee to the fact that in none of these schools is any collection of flat copies or models, whereby the teacher can give advanced instruction, except such objects as have been obtained indiscriminately, and which the drawing committee, in its last report, noticed as being not altogether satisfactory in the case of the Roxbury High School.
>
> "There is need of proper examples in all the High schools, and the instruction given will not be satisfactory until they are supplied. Work from the text-books and blackboard are both good in their several ways, but they are only the beginning of elementary instruction, and the teacher, however skilful, cannot teach model and object drawing by their help only, without the assistance of actual models and objects. The time has arrived when such are required, and could be most usefully studied from in the High schools, and I would therefore ask the committee to supply them. At present, I am sending a few copies to each school from the Normal Art School, on loan; but this decreases the Normal School collection, which is not very extensive for its own wants."

The Cambridge High School has procured, through the chairman of the committee, an excellent set of models, casts, and flat examples, as recommended by

Mr. Smith, and other towns have applied for similar lists. Owing to the time necessarily consumed in importing these materials, it is much to be regretted that the Committee on Accounts have not been able to act on this order before the summer recess.

TEACHERS' NORMAL SCHOOL.

Although little has been said about this school, your committee deem its establishment the most important step taken by the city of Boston in the Art Education of the Public Schools. With very slight expense to the city, all the teachers are enabled to fit themselves thoroughly in this department for the duties required of them by the school board. The teachers have generally appreciated the advantages thus offered, and not elsewhere obtainable, and have attended faithfully, and with good results. Especial commendation should be given to the masters who have aided the supervisor and his assistants by their sympathy and constant attendance. The teachers in the High schools were not provided for until late in the season, and a special class was formed for them. Another year it will be advisable for all who have not passed an examination and obtained certificates, to attend these classes.

The following abstract of the Report of the supervisor to the committee is appended: —

"The drawing in the Boston schools during the year 1871–2 has been carried on in accordance with the regulations of the school committee, the text-book adopted by the committee being used, as in previous years. The instruction in drawing given to the teachers, at the Normal Art School, has however, influenced their own teaching in the Grammar and Primary schools, the lessons received having been generally reproduced for the pupils in those schools by the teachers. About one half of the work done in drawing by the Grammar school scholars has been from the blackboard, though this has been the case only where the teachers have attended the lessons at the Normal School of Art.

"The experience of the year has shown that very rapid progress is made in the study of drawing by teachers who attend the classes, and as all teachers are now required to give instruction in the subject to their pupils, those who have not yet become proficient should attend the classes during the coming session.

"The course of drawing laid down in the printed scheme of instruction, both as to subjects and examples, must be adhered to by the teachers, and those who do not feel qualified to carry it out are advised to seek instruction in the subjects they have to teach, as provided by the school committee.

"An examination of the Grammar schools, held in February, 1872, displayed much excellent teaching.

"In the Primary schools a large proportion of the work has been from the blackboard, the subjects being lessons received by the teachers at the Normal Art School, the remainder carried out on the instructions issued by the published regulations of the school committee.

"In the Latin and High schools the drawing has been scarcely less elementary than in the Grammar schools with the exception of the English High School, drawing suitable to the ages and capacities of the pupils being impossible without examples with which to give instruction.

"In all the schools, the drawing has been better than might have been expected under the circumstances; but, upon a plan which embraces special subjects in progressive order for all the graded schools and each class in them, supplemented by proper appliances to make the teaching efficient, very much better results may be looked for in future years."

On June 19, 1872, an examination of the teachers who had attended the Normal Art School was held, with the following results. The attendance was voluntary, and certificates, or certificate cards, were awarded to the following-named persons, in the departments indicated by the star: —

Result of Teachers' Examination in Freehand, Model and Memory Drawing, June 19th, 1872.

	Free-hand.	*Model*	*Mem.*		*Free-hand.*	*Model*	*Mem.*
Atwood E. C.	*	*	*	Boynton A. E.	*	—	*
Abbott S. B.	*	*	*	Bowler E. F.	*	*	*
Allen A. M.	*	*	—	Bowman L. H.	*	—	*
Ames M. E.	*	*	*	Bunker A.	*	*	*
Adams E.	*	*	—	Bicknell A. T.	*	—	*
Alline L. M.	*	*	*	Bonney I.	*	*	*
Allison M. J.	*	*	*	Baker A. W.	*	*	*
Allen M. E.	*	*	*	Bonney S. R.	*	*	*
Austin S. E.	—	*	*	Burrill M. Q.	*	*	*
Bradley F. H.	*	*	*	Bearse S.	*	—	*
Burgess L. L.	*	—	*	Balch A. M.	*	—	*
Blacker E. F.	*	*	*	Brown E.	*	*	—
Baker C. A.	*	*	—	Bates C. J.	*	—	—
Bailey M. L.	*	*	—	Boardman W. L. P. . .	*	*	*
Barney M. L.	*	*	*	Bolman H. M.	*	—	—
Burrill E. F.	*	*	*	Bird L. W.	*	—	—
Burgess D. K.	*	*	*	Brooks F. N.	*	*	—
Bacon L. E.	*	*	*	Bartlett M. A.	*	*	*
Bird E. L.	*	—	—	Brown D.	*	*	*
Barton E. L.	*	*	*	Baker A. L.	*	—	*
Blanchard K. E.	*	*	*	Bettis H. A.	*	*	*
Buffum M. E.	*	*	*	Bartlett L. C.	*	*	*
Blackinton I. F.	*	*	*	Balch C. H.	*	*	*
Bicknell W.	*	*	*	Barrett A. H.	*	*	*
Baker M. A.	*	*	*	Bowles S. R.	*	—	—
Brooks M. W.	*	—	*	Baldwin C. E.	*	*	*
Bullard I. M.	*	*	*	Burge A. C.	*	—	*

NOTE. — *Teachers' Certificates* in Freehand Outline Drawing will be issued to those teachers who have successfully passed this examination and proved their ability to teach by their pupils' work.

Certificate Cards will be issued to those who have successfully passed this examination in Model and Memory Drawing; *Teachers' Certificates* will be issued after proven competency by class-work.

See Circular issued June 1st, 1872, by authority of Committee, in appendix.

Teachers' Examination. — Continued.

	Free-hand.	*Model*	*Mem.*		*Free-hand.*	*Model*	*Mem.*
Brown D. C.	*	*	*	Corliss A T.	*	—	—
Buckingham L. H.	*	*	*	Cummings M. A.	*	*	*
Boynton E. P.	*	*	*	Cox E.	*	*	—
Brigham A. A.	*	*	*	Cherrington J. B.	*	—	*
Bense J. A.	*	*	*	Chapman C. E.	*	*	—
Blanchard R. N.	*	*	*	Cooper A.	*	*	—
Baker S. J.	*	*	*	Chadwick J. W.	*	—	*
Beal A.	*	*	*	Crombie H.	*	*	*
Brackett C. M.	*	—	*	Cashman M. H.	*	—	—
Bond A. E.	*	*	*	Crocker M. A.	*	—	—
Brickett S. O.	*	—	*	Chandler S. F.	*	*	*
Baker E. I.	*	*	*	Carter M. S.	*	*	*
Bigelow C. B.	*	*	*	Collins A. E.	*	*	*
Blanchard L. F.	*	*	—	Cutter F. J.	*	*	—
Bean L. F.	*	—	*	Conant C. F.	*	*	*
Bird L. H.	*	—	—	Cheney E. B.	*	*	*
Brown E. L.	*	*	*	Crozier C. S.	*	*	*
Beckler M. L.	*	—	*	Cushman A. L.	*	—	—
Berry A. H.	*	*	*	Cook L. I.	*	*	*
Boothby A.	*	—	*	Crocker S. E.	—	—	*
Ballard G. A.	—	*	*	Crolty Miss	—	*	*
Bullard I. W. W.	*	*	*	Davis L. E.	—	*	*
Boston A. F.	—	*	*	Damon M. M.	*	*	*
Bradeen A. A.	—	—	*	Duncan M.	*	*	—
Cummings M. L.	*	*	*	Duncan A. J.	*	*	*
Cushman N. I.	*	—	—	Draper H.	*	*	*
Clapp H. L.	*	*	*	Davis M. A.	*	*	*
Capen C. J.	*	*	*	Dunnels L. J.	*	*	*
Cook C. E.	*	*	*	Dunbar H. M.	*	*	*
Chase L. M.	*	*	*	Donald F. M.	*	—	—
Chamberline A. W.	*	—	*	Dutton S. A.	*	—	*
Copp S. J.	*	—	*	Dewey F. B.	*	—	—
Crocker E. F.	*	*	*	Danforth A.	*	—	—
Clark A. E.	*	—	*	Dodge K. L.	*	*	*

Teachers' Examination. — Continued.

	Free-hand.	*Model*	*Mem.*		*Free-hand.*	*Model*	*Mem.*
Davenport H. E.	*	—	*	Ford A. E.	*	*	*
Davis A. A.	*	*	*	Frizzell S.	*	*	*
Dunton L.	*	*	*	Farley S.	*	—	—
Downe M. A.	*	*	*	Foster E. E.	*	—	*
Drake M. E.	*	*	*	Ford M. A.	*	*	*
Davis M. E.	*	—	*	Fraser A. M.	*	—	—
Easton E. M.	*	*	—	Frye S. E.	—	*	—
Evert E. M.	*	*	*	Foster S. S.	*	*	*
Ellis A. C.	*	*	—	Fisher S. E.	*	*	*
Ellis S. F.	*	*	*	Ford A. W.	*	*	—
Everett A. L. W. . . .	*	*	*	Freeman E. A.	*	*	—
Emery T. J.	*	*	*	Fillebrown A. G.	*	*	—
Eliot C.	*	—	*	Garrett S. L.	—	—	*
Emery J. F. P.	*	*	*	Gragg C. A.	*	*	*
Eliot E. B.	*	*	*	Gerry L. I.	*	*	*
Eaton E. L.	*	*	*	Gerry M. L. H.	*	—	—
Emmons L.	*	—	*	Gallagher S. A.	*	*	—
Emmons E. S.	*	—	*	Gerry M. C.	*	*	*
Edes M. C.	*	*	*	Gilbert A. M.	*	*	*
Endicott W. E.	*	*	*	Gragg G. E.	*	*	*
Frost N. J.	—	—	*	Gray F.	*	*	*
Fogarty M. E.	*	*	*	Gore M. L.	*	*	*
Fay E. A.	*	*	*	Goss E. I.	*	*	*
Fisher E. G.	*	*	*	Gould C. B.	*	*	*
Fisher L.	*	*	*	Gibbs M. A.	*	*	*
Fuller S.	*	*	*	Graham S. A.	*	—	*
Fisher C. T.	*	*	*	Gavet M. A.	*	*	—
Fisher E. C.	*	—	—	Gavet A. R.	*	*	*
Filton F. E.	*	*	*	Gould E. T.	*	*	—
Fisk L. A.	*	—	—	Gray J. A. C.	*	—	*
Fisher A. E.	*	*	*	Gillett M. L.	*	—	*
Foster M. M.	*	*	—	Gould E. C.	*	*	—
Favon H. M.	*	—	—	Gardner M. E.	*	—	*
Fessendon L. O.	*	*	*	Halcott E. B.	—	—	*

Teachers' Examination. — Continued.

	Free-hand.	Model	Mem.		Free-hand.	Model	Mem.
Holland M. L.	—	*	—	Holt E. H.	*	*	*
Hintz E. L. B.	*	*	*	Herrick S. N.	*	*	—
Hall M. C.	*	*	*	Hovey L. J.	*	*	*
Hussey F. W.	*	*	*	Jefferds L. L.	*	—	*
Hooper G.	*	*	*	Johnson H. E.	*	*	—
Hudson A. L.	*	*	*	Jenkins M. A.	*	*	—
Hurlbutt L.	*	*	*	Johnson E. R.	*	*	*
Hall E. P.	*	*	*	Jameson I.	*	*	*
Haskins S. E.	*	*	*	Jennison C. E.	*	*	*
Hammond A. S.	*	*	*	Joslin R. R.	*	*	*
Hamblin S. D.	*	*	—	Johnson L. F.	*	—	*
Horr S. B.	*	*	*	Jacobs M. C.	*	*	*
Hills H. M.	*	*	*	Jones D. W.	*	*	*
Higgins N. T.	*	*	*	Johnson P.	*	*	*
Hoyt E. G.	*	*	*	Jenkins A. L.	*	*	*
Hanna I. M.	*	*	*	Johnson M. E.	*	*	*
Henshaw M.	*	*	—	Johnston M. E.	*	—	*
Harrington E. M.	*	*	—	King C. F.	*	*	*
Halliday M. C.	*	*	*	Kimball C. F.	*	*	*
Heard O. C.	*	*	*	Kelley E. I.	*	—	*
Howard M. L.	*	*	*	Kelley M. P.	*	—	—
Hearsey S. E.	*	*	*	Kyle M.	*	*	*
Holbrook, M. E.	*	*	*	Kelley A. T.	*	—	—
Harden C. H.	*	*	*	Keller E. M.	*	*	*
Horne E. T.	*	*	*	Kelven I. M.	*	—	*
Hunt E. A.	*	*	*	Kimball M. D.	*	*	*
Hotchkiss L. S.	*	*	*	Kent A. B.	*	*	*
Halstrick E.	*	*	—	Lothrop C.	—	—	*
Howe E. L.	*	*	*	Litchfield C. S.	*	*	*
Howe E. L.	*	*	*	Lewis H. A.	*	*	*
Hubbard D. B.	*	*	*	Leonard A. M.	*	*	*
Hamlin D. A.	*	*	*	Lothrop H. S.	*	*	*
Hewes C. L.	*	*	*	Leary O. E. G.	*	*	*
Hosmer S. H.	*	*	*	Light M. F.	*	*	*

Teachers' Examination. — Continued.

	Free-hand.	*Model*	*Mem.*		*Free-hand.*	*Model*	*Mem.*
Long J. F.	*	*	*	Morse M. A.	*	—	—
Lincoln C. I.	*	*	*	Marshall F.	*	*	*
Lovell S. E.	*	*	*	Mansfield E. W.	*	*	*
Lothrop E.	*	*	—	Morse L. S.	*	*	*
Lothrop L. I.	*	*	*	Masters M. L.	*	*	*
Lund A. M.	*	*	—	Melville E. A.	*	*	*
Leavitt I.	*	*	*	May A.	*	*	*
Lakeman L. S.	*	*	*	McKenzie A.	*	*	—
Lanwig M. G.	*	*	*	Maxfield J.	*	—	*
Lyon A. I.	*	—	*	Mason C. A.	*	—	*
Lancaster E. M.	*	*	*	McIntyre J. A.	*	*	*
Loring S. W.	*	*	*	Miller M. L.	*	*	*
Ladd M. G.	*	*	*	Neill A. M.	—	*	—
Lynch C. M.	*	*	—	Newell A. E.	*	—	*
Long W. H.	*	*	*	Newell O. S.	*	*	—
Lawrence I. B.	*	*	*	Neale M. F.	*	*	*
Metcalf, R. A.	*	*	*	Norris J. O.	*	*	*
Maynard E. E.	*	*	*	Nickerson C. K.	*	—	*
Mitchell M. A.	*	*	—	Nelson C.	*	*	*
Morse E. E.	*	*	*	Neal G. W.	*	*	*
Murphy K. M.	*	*	*	Nason M. E.	*	—	—
Meader I. P.	*	*	*	Oliver E. M.	*	*	*
Morse M. E.	*	*	—	Oliver A. S.	*	*	*
Morse M. E.	*	—	*	Ottiwell M. E. H.	*	*	*
Meserve A.	*	*	*	O'Connor M. J.	*	*	*
Marble A.	*	*	*	Page M. E.	—	*	—
Miner H. B.	*	*	*	Pratt H. E.	*	*	*
Monroe I.	*	*	*	Peck E. B.	*	*	*
Macdonald A. E.	*	*	*	Pond M. W.	*	*	—
Mills, S. J.	*	*	*	Purce A. C.	*	—	*
McKean A. L.	*	*	*	Philbrick H. A.	*	*	*
Melvin C. G.	*	*	*	Pronk M. P.	*	*	—
Monroe L. F.	*	*	*	Preston L. R.	*	*	*
Mitchell M.	*	*	*	Parker E. J.	*	*	*

Teachers' Examination. — Continued.

	Free-hand.	Model	Mem.		Free-hand.	Model	Mem.
Page J. A.	*	*	*	Reed A. L.	*	*	*
Palmer M. A.	*	*	*	Ruggles O.	*	—	—
Pendleton L. B.	*	*	*	Synett S. T.	—	*	—
Perry S. F.	*	*	*	Swan S. H. M.	*	*	*
Page E. I.	*	*	*	Shorey S. H.	*	*	*
Pope E. A.	*	*	*	Stickney J. H.	*	*	*
Parker E. S.	*	—	—	Silver I. B.	*	*	*
Putnam G. B.	*	*	*	Symmes S. W.	*	*	*
Putnam C. P.	*	—	*	Simpson P. H.	*	*	*
Pickering E. A.	*	*	*	Stetson L. J.	*	*	*
Pevear E. M.	*	—	*	Snow J. D.	*	—	*
Perkins G.	*	—	*	Shaw M. A.	*	—	*
Powell M. E.	*	*	*	Shepard S. K.	*	—	*
Payson I. P.	*	*	*	Smith M. C.	*	*	*
Page E. H.	*	*	*	Swain E. O.	*	*	*
Puffer D.	*	—	*	Swain E.	*	—	*
Parker W. S.	*	*	—	Stone S. C.	*	*	*
Porter L. M.	*	—	—	Smith I.	*	*	*
Peeler M. F.	*	*	*	Stockman F. L.	*	*	*
Page O. M.	*	—	—	Shephard S. L.	*	*	*
Rowe S. F.	*	—	—	Simonds C. M.	*	—	*
Reed A. E.	*	—	—	Seaver C.	*	*	*
Ribas H. R. G. D.	*	*	*	Severance A.	*	*	*
Reed A. I.	*	*	*	Sprague, M. S.	*	*	*
Reed E. C.	*	*	*	Shannon E. L. P.	*	*	—
Russell S. F.	*	*	*	Sylvester A. L.	*	*	*
Robbins C.	*	*	*	Sherburne M. B.	*	*	*
Russell A. B.	*	—	*	Stoddard A. J.	*	*	*
Redding L. M. A.	*	*	*	Sawtelle E. C.	*	*	*
Richards M. L.	*	*	*	Sylvester F. M.	*	—	—
Rich R. G.	*	—	*	Stone A. M.	*	*	—
Robie R. E.	*	—	—	Smith E. N.	*	—	—
Rayne H. L.	*	*	*	Shedd A. E.	*	—	*
Reid I. F.	*	*	*	Sherwin M. M.	*	*	*

Teachers' Examination. — Concluded.

	Free-hand.	Model	Mem.		Free-hand.	Model	Mem.
Torrey F.	—	—	*	Weir A. T.	*	—	—
Towle E. E.	*	*	*	White L. B.	*	—	*
Travis C. B.	*	*	*	Whitman M. F.	*	*	*
Tappan M. F.	*	*	*	Woolson M.	*	*	*
Tucker E. I.	*	*	*	Whipple J. G.	*	—	*
Trow M. E.	*	*	*	Wood H. M.	*	*	*
Tinkham L. E. T.	*	*	—	Williams A. M.	*	*	*
Towle M. C. R.	*	*	*	Wheelwright C. L.	*	—	—
Turner E. M.	*	*	*	Wallace K. M.	*	—	—
Turner S. A. M.	*	*	*	Winning M. F.	*	—	*
Toland M. G. A.	*	—	*	Welch O. A.	*	*	*
Tufts A. S.	*	*	*	Worsley I.	*	—	*
Turner F. H.	*	*	*	Wales E. S.	*	*	*
Turner E. A.	*	*	*	Ward J. T., jr.	*	*	*
Todd E. F.	*	—	*	Whippey M. C.	*	—	*
Upham D. M.	*	—	—	Woodman M. N.	*	*	*
Varney S. E.	*	*	*	Walcott E. B.	*	—	—
Valentine E. K.	*	*	*	Williams C. P.	*	*	*
Walsh M. F.	*	*	—	Wood E. F.	*	*	*
Wright E. F.	*	*	*	Wyman E. F.	*	*	*
Wasgatt G. E.	*	*	*	Wentworth J. W.	*	*	*
Wheeler S. M.	*	—	*	Wason T. H.	*	*	—
Wait D. O.	*	*	*	Walker C. C.	*	*	*
Weed H. N.	*	*	*	Whittredge E.	*	*	*
Walton E. B.	*	*	*	White L. E.	—	*	—
Whitman A. G.	*	*	*	Wallis E. R.	—	*	—
Wallis, E. R.	*	—	*	Young, M.	*	—	*
Welch C. F.	*	—	*	Young H. M.	*	—	*

It was decided by the committee to award certificates of competency to superintend instruction in free-hand outline drawing, without further examination, to the masters of the Grammar schools.

FREE EVENING SCHOOLS.

A class, under the charge of Mr. Bradford H. Locke, was formed at the evening High School in Mason street, to teach the elementary geometrical drawing, as a preparatory course for the school at the Institute of Technology, and it seemed to serve a useful purpose, enabling some to continue their other studies at this school while learning drawing, and saving the more advanced classes from incompetent pupils.

At the Appleton-street school, the upper story had been devoted to art purposes, and had been supplied with desks and seats, but so much delay was made in the lighting apparatus, that when the school assembled on the evenings of November 6 and 7, in accordance with the rules, we were obliged to dismiss the classes until November 13, when the school was regularly opened under the charge of Mr. Charles Furneaux.

The school was divided into three classes; one working from outline blackboard drawings; the other two from flat examples and casts kindly loaned by Prof. Wm. R. Ware, of the Institute of Technology. Sixty examples, mostly from the published series of Mr. W. Smith, were given to the class in outline, and then the work became individual rather than class-teaching. Outlines of flat examples of ornament, flowers, foliage, etc., outlines of solid forms, vases, geometric solids, flowers from nature, shading from flat examples of animal and human form, landscapes, etc., and shading from the cast, required the attendance of more teachers than we could obtain, and the greatest credit is due to the gentleman who carried the school through so successfully, under so many difficulties as the teachers had to encounter. Messrs. F. B. Morse, C. F. Stone, and J. B. Hambly were the assistants, and they all most faithfuly discharged the duties assigned them.

The casts, models and examples procured for the city were delayed in England, and the casts were not ready for use until January 16th, and the flat examples (which had to be mounted) not until January 23d. An exhibition of this excellent apparatus was opened to the public at the school-rooms, and it excited great interest. The list of casts is here given : —

Reduced copies of two female torsi.
“ statuettes from tombs of the Medici, by M. Angelo.
“ “ Hercules from British Museum.
“ “ Farnese Hercules.
“ “ anatomical, displaying superficial muscles.
“ “ Dying Gaul.
“ “ Venus of Milo.
Small male torso, from British Museum.
Terminal Pan “ “ “
Bust of Young Augustus.
“ Diomede.
“ Clytie.
“ Homer.
“ Apollo (Pourtales).
“ Dione.
Mask of Julia Pia, on pedestal.
“ two children of Niobe.
“ Juno.
“ Dying Alexander.
“ Antinous.
“ Clytie.

Mask of Diomede.
" Venus of Milo.
" Queen Elizabeth.
" Madonna, of M. Angelo.
Slab from Halicarnassus.
Four panels with heads, by Donatello.
Three panels of anatomical studies of horse, lion, and antelope.
Small bas-relief of St. Anne, by Donatello.
" cast of a horse.
" " cow.
" " dog.
" " stag.
" " lion.
" " goat.
Twelve small heads of various animals.
Twelve hands and feet, and sections of face of David, by M. Angelo.
Two small groups of oranges and lemons.
Two casts of thistle-leaves.
Small group of apples.
Large, ditto.
Cast of a cluster of blackberries.
" " cherries.
" " plums.
" " apples.
" " plums (small).
" pine-apple.
" bunch of grapes.
" gourd and leaf.
" leaf of castor-oil plant.
Twelve assorted casts of leaves.
Two casts of melons.

ORNAMENT.

GREEK.

Stele-top from British Museum.
Echinus moulding.

Scroll from choragic monument of Lysicrates.
Three pointed stele-top.
Section of frieze from the Erectheum.
Two rosettes from the tomb of the Scipios.

Roman.

Large scroll from Trajan's Forum.
Frieze with boys and vase from Trajan's Forum.
Small acanthus scroll.
Four rosettes from the capitol.
Rosettes from Santa Maria del Popolo.
Florentine panel with Swan.
Nest of pilaster in the villa Medici.
Panel with griffin.
Enriched moulding.

Renaissance.

Four pilasters from the tomb of Louis XII.
Pilaster from St. Denis.
" " the Madeleine.
" in three sections (Florentine).
Portion of the architrave with eagle, from Ghiberti's gates at Florence.
Three pieces, egg-plant, pomegranate, and bird, portions of the same.
Three portions of a frieze in Westminster Abbey, by Torregiani.

Gothic.

Finial from Lincoln Cathedral.
Capital from the Temple Church.
" " Stone Church, Kent.
Spandril " " " "
Two small carved panel traceries.
Moulding boss.

Byzantine.

Panel from Bonn.
Cast of a portion of a hinge from Notre Dame, Paris.

Saracenic.

Two panels from the Alhambra.

Venetian.

Four pilasters.
Two small panels.
Two panels with griffins.
A set of the five orders of architecture, vases and capitals.
Eight small vases from terra-cotta.
Five Majolica vases and several Wedgewood vases and vase-forms.
Geometrical solids and stand.

The collection also embraced nearly a thousand flat examples, in crayon, colors, sepia, both French and English, and forming a very complete set in that department. A large portion were mechanical or architectural, and these have been used at the school at the Institute of Technology.

At Appleton street 322 students were registered, but the greatest number considered as belonging to the school was 170; the average attendance for the term, 65; males 51, females 14. Greatest number present at any one night, 91; least, 23. Of those who continued through the term, 26 were pupils of last year's classes. 23 occupations were represented. As a result of an examination conducted by the committee and Mr. W. Smith, May 6th, in the absence of the regular instructors, the following pupils were awarded certificates in the designated branches: —

	FREEHAND.		MODELS.	
	Good.	*Excellent.*	*Good.*	*Excellent.*
Joseph F. Pratt	*	—	*	—
Augusta L. Brigham	*	—	—	*
Mary E. Clapp	*	—	*	—
William Lawrence	*	—	*	—
Elizabeth R. Drowne	—	—	*	—
Caroline A. Mason	*	—	*	—
L. D. Cudworth	*	—	*	—
Herman Vogel	*	—	—	*
Mary D. Day	*	—	*	—
Mary A. Ford	*	—	*	—
Emma R. Plaisted	*	—	*	—
N. Levin	—	*	—	*
Andrew C. Fenerty	—	*	*	—
L. Anna Dudley	—	*	*	—
Jennie L. Tower	—	*	—	*
D. Fausel	—	*	—	*
Herbert Gleason	—	*	*	—
Thomas Grady	*	—	—	—
Edward Leizapot	*	—	—	—
Clara S. Fisher	*	—	—	—
Lillie Smith	*	—	—	—
Ella C. Wedger	*	—	—	—
William P. O'Connor	*	—	—	—
Edward Dewson	*	—	—	—
Clara M. Lee	*	—	—	—
Caroline B. Bigelow	*	—	—	—
Elizabeth P. Dukes	*	—	—	—
Annie E. L. Parker	*	—	—	—
George McKinney	*	—	—	—
J. R. Heywood	*	—	—	—
Charles A. Sampson	*	—	—	—
O. F. Schlegel	*	—	—	—
Michael Buckley	*	—	—	—
Timothy O'Brien	*	—	—	—

	FREEHAND.		MODELS.	
	Good.	*Excellent.*	*Good.*	*Excellent.*
Sarah Gallagher	*	—	—	—
Louis P. Pfau	*	—	—	—
Edward A. Huchener	*	—	—	—
Frank D. Kittredge	*	—	—	—
Arthur L. Jordan	*	—	—	—
Julia Renn	*	—	—	—
W. Slidensticker	*	—	—	—
Walter Dexter	*	—	—	—
Lillie C. Kempton	*	—	—	—
Louise M. Sweet	*	—	—	—
Herbert W. Gleason	*	—	—	—
Charles G. ———	—	*	—	—
Bernice DeMeritt	—	—	*	—
F. E. Rafferty	—	—	*	—
Carroll Faunce	—	—	*	—
L. F. Crosby	—	—	*	—
Anthony Hehrhahn	—	—	*	—
P. G. Gultbrandson	—	—	*	—
Charles F. Wall	—	—	*	—
R. Stinine	—	—	—	*
Christian Roas	—	—	—	*
David Weston	*	—	*	—

Examination of May 6th, 1872.

At the Institute of Technology new rooms were lighted and used, and the officers of that institution were untiring in their efforts to accommodate this school.

The class in ship-draughting was conducted by Mr. J. L. Frisbe, and was even more successful than the class of last year. Mr. C. S. Ward had charge of the class in geometrical drawing, comprising all the beginners. Mr. C. Willis Damon (who was the acting principal) gave the instruction in architectural drawing, and Messrs. Foster, Bates and Patch in mechanical. The attendance was good, and the classes here, as at the Appleton-street school, were remarkable for their excellent deportment, — no cases of discipline occurring, and the students passing out of the building without in the least disturbing the lectures in other parts of the house. The instructors in the Institute kindly loaned us models of machinery, etc., supplying a want which it is hoped our own apparatus may fill at some future time. The teachers of the evening school have, in addition to their regular duties, spent many additional hours, often late into night, assisting the chairman in preparing and distributing tickets, and getting the classes arranged and their work put in order. At the examination held May 7, 1872, certificates were awarded to the following-named persons in the designated departments: —

	Geometrical Drawing.		*Building Constructi'n.*		*Machine Drawing.*		*Ship Draughts.*	
	Good.	*Excellent*	*Good.*	*Excellent.*	*Good.*	*Excellent.*	*Good.*	*Excellent.*
Frank Rogers	*	—	—	—	—	—	—	—
J. E. Marshall	*	—	—	—	—	—	—	—
Charles Hatch	—	—	—	—	—	*	—	—
John Edwards	*	—	—	—	*	—	—	—
C. D. Barstow	—	—	—	—	—	*	—	—
F. W. Webber	—	—	—	—	—	*	—	—
G. W. Haskell	*	—	—	*	—	—	—	—
I. Redfearn	—	—	—	—	—	*	—	—
Wm. H. Miner	*	—	—	—	—	*	—	—
I. R. Coleman	—	—	—	—	—	*	—	—
Albert E. Downs	*	—	—	—	*	—	—	—
E. M. Bixby	—	—	—	—	—	*	—	—
D. D. Gifford	*	—	—	*	—	—	—	—
W. A. Turner	—	—	—	—	*	—	—	—
Wm. Kerr	*	—	*	—	—	—	—	—
A. F. Hayward	—	—	—	—	*	—	—	—
Thomas Alecott, Jr.	*	—	—	*	—	—	—	—
R. D. Clapp	—	—	—	—	*	—	—	—
Julius E. Ward	*	—	*	—	—	—	—	—
Frank A. Cady	—	—	—	—	*	—	—	—
H. R. Trask	*	—	*	—	—	—	—	—
I. B. Abbott	—	—	—	—	*	—	—	—
Silas P. Hamlin	*	—	—	—	*	—	—	—
J. D. Medland	—	—	—	*	—	—	—	—
Geo. A. Littlefield	*	—	—	—	*	—	—	—
Isaac Chase	—	—	—	*	—	—	—	—
H. C. Bagot	—	—	—	*	—	—	—	—
W. G. Pratt	*	—	—	—	—	*	—	—
J. C. McCammon	—	—	—	*	—	—	—	—
Isaac Ward	*	—	—	—	*	—	—	—
Charles Dean	—	—	—	*	—	—	—	—
R. W. Ewell	*	—	*	—	—	—	—	—
J. D. Driscoll	—	—	—	*	—	—	—	—

	Geometrical Drawing.		*Building Construct'n.*		*Machine Drawing.*		*Ship Draughts.*	
	Good.	*Excellent.*	*Good.*	*Excellent.*	*Good.*	*Excellent.*	*Good.*	*Excellent.*
J. Julian Silsby	—	*	—	—	—	*	—	—
J. F. Heath	—	—	—	*	—	—	—	—
Charles L. Drew	—	*	*	—	—	—	—	—
C. A. Davis	—	—	—	*	—	—	—	—
Wm. P. Edwards	—	*	—	—	*	—	—	—
J. W. Vickers	—	—	—	*	—	—	—	—
C. L. Reed	—	*	—	*	—	—	—	—
T. Holtie	—	—	*	—	—	—	—	—
H. L. Downing	—	—	*	—	—	—	—	—
D. Y. Davis	—	—	*	—	—	—	—	—
E. Q. Goodwin	—	—	*	—	—	—	—	—
George McLeod	—	—	*	—	—	—	—	—
Charles H. Darra, Jr.	—	—	*	—	—	—	—	—
Michael Mitchell	—	—	*	—	—	—	—	—
W. Lochant	—	—	*	—	—	—	—	—
C. O. Richards	—	—	*	—	—	—	—	—
Samuel Griffin	—	—	*	—	—	—	—	—
A. G. Emery	—	—	*	—	—	—	—	—
R. S. Wright	—	—	*	—	—	—	—	—
S. M. Morell	—	—	*	—	—	—	—	—
Ezra Crowe	—	—	*	—	—	—	—	—
W. P. Walsh	—	—	*	—	—	—	—	—
Stephen McDonald	—	—	*	—	—	—	—	—
Daniel McDonald	—	—	*	—	—	—	—	—
C. G. Foye	—	—	—	—	—	—	*	—
J. W. Hannam	—	—	—	—	—	—	*	—
James Burke	—	—	—	—	—	—	*	—
C. A. Bogan	—	—	—	—	—	—	*	—
W. A. Leydston	—	—	—	—	—	—	—	*
Joshua W. Wherren	—	—	—	—	—	—	—	*
Thomas P. Smith	—	—	—	—	—	—	—	*
W. A. Tolman	—	—	—	—	—	—	—	*
William Conelly	—	—	—	—	—	—	—	*

At the exhibition of the State Drawing Schools at the Horticultural Hall, in this city, in May, the schools were both very creditably represented.

The following table shows the number of drawings exhibited, and awards made: —

	DRAWINGS.			AWARDS.	
	Total.	Fr. H'd.	Instr'l.	*H. M.	Excel't.
Boston, . . .	282	101	181	40	10
Taunton, . . .	79	—	79	14	5
Northampton, . .	8	—	8	2	1
Springfield, . .	20	1	19	3	2
Haverhill, . . .	8	—	8	2	—
Lynn, . . .	8	3	5	4	2
Lawrence, . . .	13	1	12	4	1
Lowell, . . .	70	52	18	6	3
Newton, . . .	20	—	20	1	—
New Bedford, . .	24	—	24	3	2
Worcester, . .	80	57	23	11	1
	612	215	397	90	27

The following are the awards of the degrees of excellence, according to the official report of the Board of Examiners: —

BOSTON.

N. Levin, ...	Flat copy, ..	Honorable mention,	Freehand Drawing.
T. O'Brien, ...	Object, ...	“ “	“ “
F. B. Oliger, ...	Flat copy ..	“ “	“ “
F. Orcutt, ...	“ ..	“ “	“ “
L. D. Cudworth, ..	“ ..	“ “	“ “
D. Fausel, ...	Object, ...	Excellent, ...	“ “
A. C. Fenety, ...	“	“	“ “
N. Levin, ...	“	Honorable mention,	“ “
N. Levin, ...	“	“ “	“ “
D. Fausel, ...	“	“ “	“ “

E. Lippold, ...	Flat copy, ..	Honorable mention,	Free-hand Drawing.
R. Sturn, ...	“ ..	“ “	“ “
Martha E. Dean, ..	“ ..	“ “	“ “
R. Sturn, ...	Object, ...	Excellent, ...	“ “
J. E. Marshall, ...	“	Honorable mention,	Mechanical.
C. Hatch, ...	“	“ “	“
A. E. Downs, ...	“	“ “	“
T. Allecott, Jr.....	“	“ “	“
A. S. Downs, ...	“	“ “	“
J. Ward, ...	“	“ “	“
W. H. Chase, ...	Flat copy, ..	“ “	“
S. Redfearn, ...	“ ..	Excellent, ...	“
G. A. Haase, ...	“ ..	Honorable mention,	“
D. O. Davis, ...	“ ..	“ “	Architectural Drawing
W. F. Lord, ...	Blackboard,	“ “	Geometrical Drawing.
T. B. Pepper, ...	“	“ “	“ “
T. Smith, ...	Original, ...	“ “	Ship Draughting.
J. Burke, ...	“	“ “	“ “
B. Furnald, ...	“	“ “	“ “
W. A. Lydston, ...	“	“ “	“ “
C. G. Frye, ...	“	“ “	“ “
C. H. Bogan, ...	“	“ “	“ “
C. H. Bogan, ...	“	Excellent, ...	“ “
J. Burke, ...	“	“	“ “
C. G. Frye, ...	“	“	“ “
B. E. Furnald, ...	“	“	“ “
C. A. Fitzgerald, ..	Object, ...	Honorable mention,	Building Construction.
C. S. Thompson, ..	“	“ “	“ “
J. W. Vickers, ...	“	“ “	“ “

C. L. Reed, ...	Object, ...	Honorable mention,	Building Construction.
J. G. Medland, ...	"	" "	" "
S. McDonald, ...	"	" "	" "
G. A. Haase, ...	Flat copy, ..	" "	" "
John W. Harris. ...	" ..	" "	" "
M. Mitchell, ...	Original, ...	" "	" "
Carl Richter, ...	"	" "	" "
R. S. Wright, ...	"	" "	" "
R. S. Wright, ...	"	" "	" "
H. C. Bagot, ...	"	Excellent, ...	" "
Charles Dean, ...	"	"	" "

In closing this third annual report, your committee present a programme for instruction in drawing,* which they ask the Board to adopt, in order that both teachers and pupils may have a clearly defined course for the coming year, and that the teachers may know what subjects they are required to teach. The greatest change is the substitution of the regular teachers for special instructors in the lower classes of the High schools. This is a step in the direction indicated in the first report of this committee, and it is a step which seems highly desirable, as the elementary instruction is quite as well given by the regular teachers. We have lost the services of Mr. Charles Furneaux, who has, during the past year, given entire satisfaction at the Girls' High School, and we have not filled his place, since in the judgment of Mr. W. Smith, general supervisor, the remaining corps of special instructors can perform the additional duties thus thrown upon them. Saturdays have been devoted to their special instruction, by Mr. Smith, and the system of inspection of all the schools is continued, making the general supervisor responsible for this inspection.

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* See pp. 30, 31.

The want of suitably trained instructors for the advanced classes, and especially those of the evening schools, we were in hopes would be supplied in time by the establishment of a State Normal Art School; but the Legislature failed to take the necessary action. Perhaps this city, to secure the location of an Art School in its midst, may be willing to join with the State in the erection of a suitable building in which our evening and teachers' classes might be accommodated. We feel that such a school must be established sooner or later, and every year we are obliged to employ instructors in some departments very imperfectly fitted for their duties. The demand for the few competent men is so great that twice the amount of salary paid by this city is offered by neighboring towns, and of course the good teachers are drawn away from us. We therefore consider that the salary of the Principal in the evening school should be ten dollars per night, and that of the assistants five dollars. And an order is appended to this report.

Both the School Board and the teachers have exhibited so much interest in and consideration for the department of drawing, that the labors of your committee, which seemed difficult and perplexing three years ago, have been much lightened the past year, and we cannot but feel that the condition of all the schools has been improved by the exercises adopted for training the hand and eye.

WM. T. BRIGHAM,
WM. WOODS,
J. C. J. BROWN,
GEO. F. BIGELOW,
R. C. WATERSON,
JAMES WALDOCK,
JAMES MORSE,
C. C. PERKINS,

Committee.

Plan of Instruction in Drawing for the Public Schools of the City of Boston for the year 1872–73.

SCHOOLS.	Classes.	Time given per week.	Number of Lessons per Week.	Length of Lessons.	Drawing on.	Taught by.
1. Primary Schools	6. 5. 4.	Two hours	Four	30 minut's	Slates	Regular Teachers.
1. Primary Schools	*3. 2. 1.	Two hours	Four	30 minut's	Paper in blank books	Regular Teachers.
2. Grammar Schools	*6. 5. 4.	One hour and a half	Three	30 minut's	Paper in blank books and text-books	Regular Teachers.
2. Grammar Schools	*3. 2. 1.	One hour and a half	Three	30 minut's	Paper in blank books and text-books	Regular Teachers.
3. Latin and High Schools	*Lower classes	Two hours	Two	60 minut's	Paper in blank books and text-books	Regular Teachers.
3. Latin and High Schools	Higher classes	Two hours	Two	60 minut's	Paper in books and on sheets	Special Instructors.
4. Normal Scoools	*All the classes	Two hours	Two	60 minut's	Papers in books	Special Instructors.

* One third of the pupils of classes marked thus (*) will draw on the blackboard each lesson, so that every three lessons each pupil will have drawn upon the board.

Subjects taught and order of lessons for each week.

1. Freehand outline from Cards, Charts and Blackboard lessons*—the easier copies. Memory lessons. Definitions of plane Geometry to be committed to memory and illustrations drawn. Dictation lessons.

ORDER OF LESSONS.

1. From Cards or Charts. 2. From Blackboard. 3. Memory and dictation alternately. 4. Geometric definitions.

The more advanced copies in the Cards, Charts and Blackboard examples.* Memory and dictation lessons. Object lessons illustrated by drawings. Geometric definitions drawn on a large scale.

ORDER OF LESSONS.

1. From Cards or Charts. 2. From Blackboard. 4. Memory and dictation alternately, 4. Object lessons and Geometric definitions alternately.

2. Freehand outline of ornament and objects from Blackboard* alternating with lessons in text-book. Map drawing. Memory and dictation lessons. Geometrical drawing up to Prob. 52.

ORDER OF LESSONS.

1. Objects from Blackboard and in text-book alternately. 2. Memory and dictation lessons alternately. 3. Geometrical and Map drawing alternately.

Freehand outline drawing from solid models. Geometrical drawing up to the end of the course. Design in Geometric forms from Blackboard.* Memory drawing. Map drawing.

ORDER OF LESSONS.

1. Model Drawing. 2. Geometrical and Memory alternately. 3. Map drawing and design alternately.

3. Freehand object drawing from the Blackboard* and object. Design in Geometric forms. Geometrical drawing up to the end of the course.

ORDER OF LESSONS.

1. Object drawing from Blackboard* and object alternately. 2. Design and Geometrical drawing alternately. Model drawing from the solid object, in outline and shading. Drawing from Copies in outline, shading, or coloring. Lessons in perspective drawn by Freehand.

ORDER OF LESSONS.

1. Object drawing. 2. Other subjects chosen by Instructor.

4. Drawing from Blackboard.* Normal course of outline. Object drawing. Freehand outline design for Teachers. Dictation lessons. Geometrical drawing the whole course.

ORDER OF LESSONS.

1. Drawing from Blackboard* in books and design alternately. 2. Geometrical drawing and model drawing alternately.

* From the Normal Art School Course.

Ordered, That the programme submitted by the Committee on Drawing be adopted in the Public Schools of this city, from this date.

Ordered, That the salaries of the Principals of the evening schools be ten dollars per night, and the assistants five dollars per night when actually employed by the committee.

BOSTONIA
CONDITA A.D.
1630.

APPENDIX.

City of Boston.—Department of Drawing.

Certificates for Superintendence.

The Committee on Drawing have voted to award certificates to the masters and principals of the Grammar Schools for their success in the *general management* of the subject of *free-hand outline drawing* as evinced at the exhibition recently held.

Teachers' Certificates.

Teachers' certificates will be awarded to those whose qualifications are attested by their own drawings at the annual examination of teachers and their success in imparting to pupils the ability to delineate the forms which have been the subjects of study under the special instruction of the supervisor and instructor of drawing.

Masters and principals can obtain teachers' certificates, in addition to the certificates for superintendence, by proving their competency at the examination of teachers and giving satisfactory class instruction.

The certificates will be limited this year to the subject of *free-hand outline drawing*, as it is the intention of the committee to issue certificates annually for success in teaching the particular branch of drawing which is required of the pupils in advance of their previous work.

Certificate Cards.

Certificate cards will be issued to those teachers who pass a satisfactory examination in *model and memory drawing*, and will be recorded to their credit, to be exchanged for full certificates in these branches after satisfactory results have been obtained from their pupils.

By authority of the Committee on Drawing.

J. COFFIN JONES BROWN.

WALTER SMITH, *Gen. Supervisor of Drawing.*

June 1st, 1872.

REPORT OF THE COMMITTEE

ON

INDUSTRIAL SCHOOLS.

REPORT.

The Committee on Industrial Schools respectfully ask leave to submit the following report: —

The subject of Industrial Schools was brought to the attention of this Board three or four years ago, by a petition signed by a large number of the most intelligent, wealthy and prominent citizens in the community. The committee to whom that petition was referred, after considerable consideration of the subject, reported in favor of making an experiment, to see if anything could be done, by taking charge of and somewhat enlarging an Industrial School for girls, then in operation in Staniford street, and an appropriation in behalf of the experiment was made by the Board. From various causes and influences, which need not be detailed, that experiment was never, under the auspices of the committee, fully and thoroughly made. In fact, the school itself came to an untimely end before the enlarged experiment which the committee contemplated had begun; and no further consideration or action upon the subject was had for more than a year. In January, 1870, on motion of C. C. Shackford, then a member of this Board, another committee on Industrial Schools was appointed, of which he was chairman. On the 10th of the next May, this committee, on leave, reported in print. This report, after speaking of the importance of Industrial Education, and the difficulties that surrounded the subject, so far as the action of this Board was concerned, called special attention to one department in the girls' schools, and took the ground that by enlarging and emphasizing this department in those schools much good might be done, and the complaint made of a want of practical adaptation in our system of public education be partially met. The report closed with four orders: First, that sewing be made obligatory in all the Grammar schools for girls Second, that sewing, for two hours each week, be adopted in all the classes, except the first and second. Third, that in the third and fourth classes, cutting and fitting shall also be introduced. And, fourth, that a department for practical instruction be added to the Girls' High and Normal School, wherein book-keeping, designing, telegraphing, drawing on wood and stone, and needle-work, in its various branches, shall be taught as elective studies, to which also pupils may be transferred from the first and second classes of the Grammar schools.

This printed report laid upon the table of the Board till the next November, when, on the motion of Dr. Curtis, the report was taken up, and the first three orders were referred to the Committee on Rules and Regulations; and the fourth, to the Committee on the Girls' High and Normal School. Neither of these committees, it is believed, ever reported upon the orders thus referred to them. In May, 1871, a petition, signed by nearly the same persons who signed the original petition of 1869, was brought to the room and laid upon the President's table, for him to present, but owing to several successive adjournments, for want of a quorum, before petitions could be reached, it got swept from the table, with other papers, into the hands of the Secretary; and so passing from the remembrance of those somewhat interested in it, it was, in fact, never presented to the Board. This petition simply asked that the orders reported by Mr. Shackford might be adopted by the Board and carried into execution. Under this state of things, the present Committee on Industrial Schools was appointed at the organizing of the Board in January of this year. This committee, in endeavoring to discharge the duty, have turned their attention entirely to a point indicated in Mr. Shackford's report, — the enlargement of the department of sewing in the girls' Grammar schools; and after conference with others, and especially with Mrs. Hemenway, and other ladies interested in the experiment which she has been sustaining in the intermediate school in Tyler street, have come to the conclusion to recommend that sewing, which is now taught in the sixth, fifth, and fourth classes of the girls' Grammar schools, be carried forward gradually into all the classes of the girls' schools; the fourth, of this year, for instance, when it becomes the third class of next year, to continue to receive appropriate instruction in sewing; and so on, when it becomes the second, and when it becomes the first class; and thus in three years, instruction in sewing will be given in all the classes, by a gradual and progressive change, which will not interfere with the intellectual culture and training. They propose, also, that as instruction in sewing is thus enlarged in the classes to which it is given, it shall be enlarged in the character and practical value of the instruction given, and that certainly in the first and second, and perhaps begun in the third, instruction shall be given in cutting, shaping, fitting, and thoroughly making girls' and ladies' garments; the requisite materials for this instruction to be furnished by the city, under the supervision of the Committee on Accounts. They believe, from the examination of Mrs. Hemenway's experiment, that one good, thoroughly competent teacher of sewing, cutting, fitting, etc., giving her whole time to the work, could take charge of one school, and in the twenty-six school-hours of the week give two hours a week of instruction to all the pupils of that school; and, in some cases of the mixed schools, where the number of girls is not so great, one teacher devoting her whole time might take charge of two schools. Your committee believe that the whole cost of this experiment, after it got fully established, in all the classes in girls' Grammar schools, would not be more than five or six thousand dollars a year; and a portion of this might be returned from the sale of the garments made by the first and second classes.

With these views the committee submit the following orders.

S. K. LOTHROP, *Chairman.*

1. *Ordered,* That, on and after September next, sewing, now taught in the sixth, fifth, and fourth

classes of the girls' Grammar schools, be gradually introduced into the three other classes in said schools; the present fourth class and its successors, as it advances from the fourth to the third, and from the third to the second, and from the second to the first class, to continue to receive instruction in sewing, so that in three years from this time it may be universally taught in all the classes of the girls' Grammar schools, and more thorough and progressive instruction given.

2. *Ordered*, That, whenever the gradual progress of this plan permits, practical instruction in cutting, shaping, fitting, and thoroughly making children's and ladies' garments shall be given to the members of the first and second classes of the girls' Grammar schools, and that, in preparation for it, the district committee of each girls' school shall be authorized to procure and nominate to this Board a sewing teacher, thoroughly competent to give the aforesaid instruction, and, giving her whole time to the city, to take supervision and charge of the whole department of sewing in the school; her salary to be subsequently determined by this Board, but never to exceed the highest salary paid to any female assistant in said schools.

3. *Ordered*, That, when the gradual progress of this plan makes it necessary, the Committee on Accounts be authorized to furnish, on the requisition of each district committee, all the materials necessary to give the contemplated instruction in cutting and making garments, to an extent not exceeding two hundred dollars to each school, and not exceeding fifty dollars to any one room.

4. *Ordered,* That each district committee be authorized, if at any time they shall deem it expedient, to select and associate with them one or more competent ladies from their district, to aid them in superintending or carrying out this plan of thorough instruction in sewing.

ADDRESS AND SCHOOL FESTIVAL.

ADDRESS OF HON. WILLIAM GASTON

TO THE SCHOOL COMMITTEE,

IN RESPONSE TO A VOTE OF THANKS AT THE CLOSE OF THE MUNICIPAL YEAR.

At a meeting of the School Committee, held on the second day of January, 1872, Dr. Lamson offered the following order: —

> *Ordered*, That the thanks of this Board be tendered to Hon. William Gaston, the president, for the impartial, dignified and courteous manner in which he has presided over the deliberations of this body during the past year.

The motion was seconded, and the order was passed by a unanimous vote, the members rising in their seats.

Mayor Gaston responded as follows: —

Gentlemen of the School Committee: — I did not bring to the duties of my office any previous experience at your Board. I came here as your presiding officer under the provisions of the City Charter, a stranger to many of you, and without any acquaintance with your rules and modes of procedure. I was therefore in a situation to require your forbearance and your aid. I am happy that the vote which you have just passed, and for which I thank you, gives me an opportunity to acknowledge your constant and uniform courtesy towards me and the ready assistance which you have rendered me in meeting the duties and responsibilities of my office.

You have the general care of the education of nearly forty thousand children, instructed by nearly one thousand teachers. This high trust requires, for its proper execution, great intelligence, fidelity, and industry, and I can bear testimony to the energy, zeal, and fidelity with which you have met and discharged your important duties, and if I have performed the lesser duties of my office, as Chairman, with anything like the success with which you have performed the greater duties of yours, I know that I shall have no occasion to regret the part which I have taken in your deliberations for the past year.

I am grateful to you for your generous courtesy and for the kind expressions contained in your vote.

ANNUAL SCHOOL FESTIVAL.

1872.

The annual School Festival was held in Music Hall, on the afternoon of Wednesday, July 3d, under the direction of the following Special Committee, appointed for the purpose, viz., Messrs. Warren P. Adams, Wm. O. Johnson, Adino B. Hall, Geo. M. Hobbs, John Noble, Abijah Richardson, P. J. Whelton, Joel Seaverns, and John W. Porter.

Invitations were extended to the City Council and heads of departments, the School Committee, all the teachers of the Public Schools, the medal scholars, and all the pupils of the High and Grammar Schools who received the graduating diploma at the recent annual exhibitions of the schools. State officials and distinguished citizens were also present as guests.

The graduates of the present year of the High and Grammar Schools, numbering upwards of twelve hundred, were seated in the balconies, while the spacious floor was filled by an assemblage of their parents and teachers, and other guests of the occasion.

The following description of the decorations of the Hall, which, with the exception of the flowers, were designed for the Municipal celebration of the Fourth of July, is copied from the "Boston Journal:" —

"Of all the fixtures in Music Hall, except the statuary and large organ, not one has escaped the art touches of the decorator. The appearance of the hall where is erected the large organ has rarely been equalled, if it ever was before. So profuse and yet so tasty had been the arrangement of the floral decorations that the spectator felt almost filled with the belief that the massive, decorated organ had been transplanted to a retreat of some artist gardener. The whole brow of the rostrum was banked with exotics, and at intervals in this belt of delicate green shade were beautiful rosettes of flowers, with trailing vines adorning in streamers and festoons the front of the white walls below. At the sides of the great organ were hundreds of fine hand bouquets, each one a floral treasure; and these were so laid and shaped that the whole, in one form, twice repeated on a side, represented pyramids of flowers, four in number. But the work of the embellishers did not rest there. The balconies were richly and chastely trimmed, the lower one in blue and white lace drapery, caught up at intervals in rosettes of white lace, and so divided that attractively appeared, equi-distant on each side, three mottoes with ends finished in a fall of American ensigns. In the centre of a white cloud, on a field of blue bordered with gold, were the words 'Independence Declared.' This on one side of the clock opposite the stage. For a companion piece, counterpart to this, on the other side of the dial, were the letters inscribing 'July 4, 1776.' Around the clock centre was a glory of stars and stripes, and this, leading first to the mottoes, terminates in the drapery. The other mottoes were, on one side: —

"'All is peace, and God has granted you this sight of your country's happiness.' — D. Webster.

"'Look abroad into this lovely land, and mark the happiness with which it is filled.' — D. Webster.

"'Yes, look abroad into the whole earth, and see what a name you have contributed to give to your country.' — D. Webster.

"On the opposite sides were the following inscriptions inclosed as upon the first described, viz.: —

"'What noble institutions! The oppressed of all countries, the martyrs of every creed, may there find refuge.' — Phillips.

"'When the glories of our name shall be but the legends of traditions, and the lights of our achievements live only in song, philosophy will rise again in the sky of her Franklin, and glory rekindle at the urn of our Washington.' — Councillor Phillips, Ireland.

"'Happy, proud America! The lightning of heaven yielded to your philosophy, the temptations of earth could not seduce your patriotism.' — Phillips.

"The upper balcony was brilliant with flags, shields, coats of arms of Boston, of the Commonwealth, banners, foreign flags and signals, displayed with rare respect to station, and in effect most pleasing to the eye. Add to this picture the pretty, light and showy dresses and trimmings of the holiday school girls and the prim and neatly dressed school lads, as seen in the balconies, and an idea can be had of the brilliancy which on every side surrounded the spectators promenading the comfortably filled floor of the hall at the opening of the Boston Public School Festival for 1872 yesterday afternoon.

"Occupying the right of the stage was the full Germania orchestra, and in the centre of the platform were conspicuously seated Mayor Gaston, Dr. Samuel Eliot, Warren P. Adams, Chairman of the Committee of Arrangements, Superintendent Philbrick and Rev. J. Freeman Clarke, while more retired were other members of the School Committee.

"At a little past three o'clock, Warren P. Adams, Esq., Chairman of the Committee, called the assemblage to order and introduced Rev. W. F. Mallalieu of Boston, who invoked the Divine Blessing.

"Mr. Adams then addressed the audience as follows: —

"'*Ladies and Gentlemen — Graduates of our Public Schools:* We have assembled once more to celebrate this festal occasion. Once more you have come up to this Mecca of your hopes and trials and ambitions to receive at our hands the recognition of merit which you have so well earned, and which the City of Boston so cheerfully bestows.

"'Welcome, thrice welcome, springs to our lips as we greet your smiling faces here to-day. We bid you God-speed on the journey of life, of which to-day you have passed another milestone. We feel that the perseverance you have shown, the courage you have developed, the intellectual strength and vigor you have gained in the past will make you equal to greater victories in the future. We feel that while Boston bestows her honors upon you, she may confidently look to you in the various public or private stations you may be called upon to fill, to reflect enduring honor upon her. She expects that you will not dim the lustre which the graduates of her public schools have already shed on her fair name. Let it be remembered that you have barely entered the vestibule of that sanctuary of knowledge whose inner glories they only can explore whose heart and soul are quickened and impelled by the largest faith and an invincible desire to seek the truth.

" 'If this day is to end the progress in self-improvement of any of you, if it is to mark the turning point where ambition shall cease, and effort fail, then will it be the celebration rather of your humiliation than of your success and victory. But we will not believe that such can be the case. We feel that the lessons you have received from your kind, conscientious and faithful teachers will not be so misapplied, and the seeds of thought they have sown in your minds and hearts will spring up and bring forth fruit, twenty, fifty, nay, a hundred fold. But it is not with any words of mine that I would interrupt the festivities of this occasion, or delay the intellectual and social entertainment that awaits you. Press on in the good work you have begun. Go forth with light and joyous hearts to the holidays that stand so temptingly before you. Go with the warm and heartfelt wishes of all of us for your continued happiness and success. Go with the blessings which Heaven never fails to shed on those who with pure hearts and earnest lives have faithfully striven to do their duty. Go forth each of you to the battle of life with renewed courage and vigor, and ever

" 'Bear through sorrow, wrong and ruth,
In thy heart the dew of youth,
On thy lips the smile of truth.' "

" Dr. Samuel Eliot, head-master elect of the Girls' High School, being introduced by the Chairman, spoke to the assemblage at considerable length, making use of language nearly as follows: —

" '*Mr. Chairman, and fellow Bostonians, old and young*: This festival attests the capacity of our school system. As it is said the best way to obtain good art is first to enjoy it, we have only just to look about our city to see how our schools are enjoyed to learn why we have them. That we here enjoy education is seen in its fruits, and also in the work of teachers and scholars to obtain them. But work can be either good or evil, and the evil lies in the application. Where this exists; where the dreary cloud of work in school days is not broken by a little blue or flood of light, then perhaps belongs the quotation: —

> " 'And he is oft the wisest man who is not wise at all.'

" 'That work which we enter into and still have time to look about us in performing is the true work.'

" The speaker here drew an analogy between nature's work in the vegetable world and man's in the intellectual. The leaf and flower must be trained every season of the year to be perfect in itself. There then should be a season or seasons for work and relaxation, for in man the overworked becomes a hardened deformity, like the plant of which no care at the proper time is taken. We have cause to rejoice that our school-houses stand mighty, and their doors are wide open; that music is heard within them, and that drawing is seen and enjoyed by the children. These not only work in the school, but pervade the homes of the scholars and help sweep away the wrinkles from the New Englander's brow, which have become so proverbial. An educational result, to be worth anything, must be a compact of soul with soul. He then spoke of what some term the monotony of school life, and closed his remarks with valuable suggestions to teachers and those before him who may be instructors in the future upon school exercises, which will end, not in a compendium of monotonous work, but in an eventide full of the rich effulgence of culture and intelligence.

" Rev. James Freeman Clarke was the next speaker. He opened his remarks with a beautiful compliment to the young ladies, the sight of their entering the hall for the festival having attracted him within.

" After a few remarks by the Superintendent, Mayor Gaston was announced and received with applause. He said: —

" '*Ladies and Gentlemen*: I am glad that amid the excitement of these festival days this occasion has not been forgotten, but rather remembered and acknowledged with all the honors conferred upon its corresponding seasons of the past. It marks a change in your young lives, and, in behalf of the Committee of the Public Schools of Boston and that of the citizens and the City Government I represent, I would wish you unbounded success and happiness in the future.'

" At the conclusion of the Mayor's remarks followed the series of grand marches of the Germanias, which marked the time for the diploma young ladies and lads as they followed in procession, the boys of the Latin, High and English High Schools, down the right staircase from the first balcony and across the stage. The pupils numbered one thousand from the Grammar and three hundred from the High Schools, and were a long time in passing from the galleries and again into their seats, as each member of the bright, joyous band received from the hand of Mayor Gaston a floral tribute. Then the children carried out the rest of the festival sports in the banquet hall of Bumstead, and that provided in the right balcony. After this followed the closing dance."

FRANKLIN MEDALS,

LAWRENCE PRIZES,

AND

DIPLOMAS OF GRADUATION.

FRANKLIN MEDAL SCHOLARS.

1872.

LATIN SCHOOL.

George L. Giles,
J. Frank Botume,
James B. Troy,
George H. Eldridge,
Jabez E. Giles,
Frank G. Steele,
Willis D. Leland,
Henry P. Jaques,
Samuel T. Fisher,
Marshall P. Washburn,
Edward Bicknell.

ENGLISH HIGH SCHOOL.

Eugene D. Hickey,
Isaac B. Mills, Jr.,
Cornelius F. Doherty,
Walter Jenney,
William J. Covill,
Charles F. W. Schlimper,
Edgar A. Cook,
Frank A. Rich,
Lorin F. Deland,
George W. Hayford,
E. Clarence Hovey,
George F. Ricker,
Joseph F. Leland, Jr.,
Walter D. Townsend,
Ward Williams,
David B. Harding,
Julius H. Sussman,
Clarence E. Stone.

LAWRENCE PRIZES.

1872.

LATIN SCHOOL.

DECLAMATION. — *First Prize.* — J. Frank Botume. — *Second Prizes.* — Edward Bicknell, Edward B. Hunt. — *Third Prizes.* — John T. Bowen, Thornton H. Simmons.

Exemplary Conduct and Fidelity. — Samuel T. Fisher, Preston H. Grover, Edward E. Hayden.

Exemplary Conduct and Punctuality. — Frank B. Thayer, Edward B. Hunt, Willis B. Allen, Owen. B. Sanders, J. Loring Cheney, Edward S. Hawes, George W. Merrill, George L. Giles, J. Q. A. Brett, Harry F. Hodges, Charles S. Lane, M. Vassar Pierce, James B. Troy.

Excellence in the Classical Department. — *First Class.* — George L. Giles. — *Second Class.* — J. Loring Cheney. — *Third Class.* — Willis B. Allen. — *Fourth Class.* — Samuel E. Somerby. — *Fifth Class.* — Edward B. Hunt. — *Sixth Class.* — Charles S. Lane.

Excellence in the Modern Department. — *First Class.* — J. Frank Botume. — *Second Class.* — J. Loring Cheney. — *Third Class.* — Willis B. Allen. — *Fourth Class.* — Samuel E. Somerby. — *Fifth Class.* — Edward B. Hunt. — *Sixth Class.* — Lott Mansfield.

Prizes for Special Subjects. — *A Latin Poem.* — Jabez E. Giles.

A Latin Essay. — George L. Giles.

An English Essay. — Edward Bicknell.

A Translation from French. — J. Loring Cheney.

A Poetical Translation from Horace. — Reginald H. Young.

A Translation from Tacitus. — Willis B. Allen.

A Translation from Cæsar. — Samuel E. Somerby.

A Translation from Nepos. — Robert H. Wade.

A Translation from Principia Latina. — Edward S. Hawes.

Best Specimen of Penmanship. — Marshall P. Washburn.

ENGLISH HIGH SCHOOL.

COMPOSITION.—*First Prizes.* — G. Frank Underwood, Clarence W. Barron. — *Second Prizes.* — J. Herbert Davis, John B. Holland, Henry A. Hall.

DECLAMATION. — *First Prizes.* — Isaac B. Mills, Jr., E. Brown Goodsell. — *Second Prizes.* — E. Clarence Hovey, Robert S. Sturgis, Arthur H. Dodd. — *Third Prizes.* — Joseph D. Leland, Jr., Lory B. Fenderson.

LITERARY. — *First Prizes.* — Frank H. Leighton, John B. Jarvis, Frederick F. Parks, Henry G. Patten, C. Herbert Watson, Frederick L. Weir, Samuel E. Brown, Jr., Charles E. Estabrook, John B. Clapp, Eben C. Stanwood, Abraham P. Spitz, Henry Schonengen. — *Second Prizes.* — J. Otis Colby, Frank M. Bicknell, Alonzo G. Van Nostrand, George C. Bailey, Henry D. Thaxter, Walter E. Nichols, Robert B. Chapman, Albert E. Warner, George W. Beeching, Henry A. Hall, Lewis A. Murphy.

SCIENTIFIC. — *First Prizes.* — Samuel J. Spear, Samuel S. Boyden, Thomas A. Maguire, Charles J. Underwood, John B. Holland, Edward J. Callahan, John B. Babcock, Jr., Charles Everett, Michael J. Sullivan, Herbert Damon, Mark Stone, Albert E. Cotton. — *Second Prizes.* — A. D. French, Benjamin S. Palmer, Henry E. Webb, William S. Leavitt, John W. Means.

SPECIAL.

MINERALOGY. — James P. Frost, George A. Pierce.

GENERAL EXCELLENCE AND DEPORTMENT. — Cornelius F. Hearlihy, William Noll, Jesse Y. Baker, Fred. W. Brown, Everard J. Langell, Luther S. Anderson, Eliot Hubbard, Charles Davis, Nelson F. Cowin, Eben Gay, Jr., Frank E. Heyer, George E. Allen, Timothy H. Gallivan, Guy C. Walker, John B. Palmer, James R. Geary, Arthur F. Kelley.

DIPLOMAS OF GRADUATION.

1872.

LATIN SCHOOL.

Daniel Carpenter Bacon,
Edvardus Bicknell,
Johannes Franklin Botume,
Lawrence M. Corcoran,
Georgius Homans Eldridge,
Samuel Tucker Fisher,
Georgius Lindall Giles,
Jabez Edvardus Giles,
Holmes Hinkley,
Horatius Nathaniel Hooper,
Oscar Roland Jackson,
Henricus Percy Jaques,
Willis Daniels Leland,
Franklin Gilbert Steele,
Guattarus Tappan,
Newell Aldrich Thompson,
Jacobus Bernard Troy,
Marshall Price Washburn.

ENGLISH HIGH SCHOOL.

Charles Henry Arnold,
Thomas Henry Austin,
William Downes Austin,
George Cook Bailey,
Jesse Young Baker,
Benjamin Bellamy,
Frank Martin Bicknell,
Benjamin Bowman,
Samuel Swett Boyden,
Patrick Francis Boyle,
Frederick Harrison Brackett,
Henry Milton Brewster,
Oliver Smith C. Brigham,
Charles Dutton Brown,
George Henry Brown,
John Aloysius Brown,
Edward Augustus Buss,
Edward Joseph Callahan,
George Nelson Carter,
Herbert Buchanan Chapman,
Albert Brackett Chick,
Webster Cobb,
Joseph Otis Colby,
Thomas James Conroy,
Edgar Alfonso Cook,
Charles Henry Coughlin,
William James Covill,
Ralph Crooker, 3d,
George Warren Currier,
Lorin Fuller Deland,
Cornelius Frederick Doherty,
Charles William Donahoe,
Lory Bacon Fenderson,
George Edwin Fowle, Jr.,
Abram De Graw French,
Walter Gassett,
David Baker Harding,
Peter James Harrington,
George Warren Hayford,
Charles James Hendrie,
Cornelius Francis Herlihy,
Eugene Daniel Hickey,
Joseph Mansfield Hill,
John Bernard Holland,

Edward Clarence Hovey,
Ellery Wellington Hunt,
Edwin Irving James,
John Bradbury Jarvis,
Walter Jenney,
Stephen James Kelley,
James Bryden Kellock,
Joseph Louis Laforme,
George Louis Lavery,
John Joseph Lavery,
Frank Herbert Leighton,
Joseph Daniels Leland, Jr.,
George Adams Levi,
Harry Ashmeade Lewis,
Thomas Ambrose Maguire,
Hubbard Davis Martin,
Isaac Bonney Mills, Jr.,
Edward Peter Murphy,
James Cunningham Neilson,
Walter Franklin Nichols,
William Noll,
Fred. Thaxter Parks,
Henry Griswold Patten,
Thomas Edward Pigot,
Charles Augustus Pitman,
Walter Ashley Priest,
Charles Hallett Ramsay,
Frank Allen Rich,
Thomas F. Richardson,
George Fabyan Ricker,
Thomas Charles Riley,
Edward Nason Sampson,
Charles F. William Schlimper,
Theodore Edward Schwarz,
John Joseph Scollard,
Lawrence William Slattery,
Samuel Judson Spear,
Frank Lindsey Stevenson,
Wilber Henshaw Stinson,
Clarence Eastman Stone,
Julius Herman Sussman,
Henry Dexter Thaxter,
Caleb Adams Thurston,
Walter Davis Townsend,
Charles James Underwood, Jr.,
George Frank Underwood,
Alonzo Gifford Van Nostrand,
Torrey Everett Wardner,
Charles Herbert Watson,
Frederick Louis Weir,
Walter Edwin West,
Ward Williams,
Frank Davis Witherell,
Walstein Fuller Wright,
Carl Gustave Zerrahn.

GIRLS' HIGH AND NORMAL SCHOOL.

REGULAR AND TRAINING COURSES.

Lizzie P. Brewer,
Sarah C. Bucknam,
Emma F. Chater,
Elizabeth A. Mahoney,
Ellen M. O'Connor,
Alice J. Reed,
L. Anna Sargent,
Anna L. Savil,
Ella Warner,
Frances E. Wells,
Flora B. Wiggin.

REGULAR AND EXTRA COURSES.

Helen I. Allen,
Lina Cook,
Emily M. Deland,
Marion A. Hawes,
Amelia H. Rust,
Fannie W. Ryder.

REGULAR COURSE.

Lavinia E. Adams,
Claire K. Alden,
Amelia A. Aldrich,
Sarah A. Andy,
Anna E. Badlam,
Elizabeth G. Bailey,
Ellen H. Bailey,
Carrie L. Baker,
Ellen M. Barbour,
Frances J. Barnes,
Eudora F. Bickford,
Mary Bonnie,

Ida L. Boyden,
Anne P. Bridge,
Josephine Bryant,
Maria A. Callanan,
Jennie R. Churchill,
Clara A. Cotton,
Josephine F. Davenport,
Mary A. Dolan,
Ella A. Domett,
Frances E. Domett,
Mary H. Dwyer,
Mary W. Emery,
Emma F. Fabyan,
Helen R. Fabyan,
Annie M. Gillespie,
Fannie W. Hall,
Fannie T. Hastings,
Carrie S. Heath,
Henrietta A. Hill,
Lillie T. Hill,
S. Lila Huckins,
Julia Hyneman,
Ella T. Jackson,
Miriam Levi,
Elizabeth Lincoln,
Harriet E. Litchfield,
Isabel C. Livingstone,
Caroline T. Lothrop,
Elizabeth A. Madden,
Adela E. Maynard,
Sarah A. McGonigle,
Kate E. McGowan,
Grace Merrill,
Frances E. Mihan,
Julia L. Morrill,
Angie S. Morse,
Nancy M. Morse,
Pamell S. Murray,
Abbie M. Nye,
Honora T. O'Dowd,
Lizzie Ordway,
Lilias E. Page,
Mary O. Parker,
Georgianna Pickernell,
Florence A. Pierce,
Almy C. Plummer,
Harriet I. Preble,
Mary E. Reid,
Helen E. Rice,
Annie M. Robbins,
Mary G. Ruxton,
Nellie G. Sanford,
Frances Schlegel,
Emma J. Seaman,
Ardelle T. Smith,
Ella S. Smith,
Emma A. Smith,
Florence J. Smith,
Mary H. Smith,
Annie T. Southard,
Anna L. Story,
Olivia M. Studley,
Sarah E. Swan,
Frances H. Thacher,
Lillie E. Thomas,
Amanda P. Ventress,
Ella F. Wallace,
Susie E. White,
Emma C. Whitney,
Addie E. Whittemore,
Lizzie Wilbur,
Alice M. Williams,
Kate D. Williams,
Mary J. Williams,
Uleyetta Williams,
Martha D. Wise,
Marion L. Woodward.

ROXBURY HIGH SCHOOL.

Boys.

Benjamin Leighton Beal,
Henry Abial Chamberlain,
William Francis Crafts,
Romanzo James Dolan,
Edward Francis Fay,
James Clinton Gerry,
Charles Herbert Heustis,
Alfred Epher Hunt,
Franklin Wells Parker,
Charles Wisner Riddle,
Edward Cheever Rogers,
Edward George Stalder,
Charles Ware,
Frank Edward Wiggin.

Girls.

Anna Wells Bumstead,
Lizzie Adelaide Colligan,
Sibyl Theresa Crooker,
Frances Maria Davis,
Lillie Jane Davis,
Addie Frances Dexter,
Mamie Foster Drake,
Anna Mulford Edmands,
Frances Theresa Kelley,
Emma Isadora Lingham,
Anna Macdonald,
Frances Julia Manning,
Alice Maud May,
Annie Lucy McDonough,
Isabel Wilson Morrill,
Katie Alice Nason,
Susan Abbie Pearson,
Harriet Brigham Phelps,
Bridget Elizabeth Scanlan,
Marie Lissie Smith,
Fannie Warren Sprague,
Amelia Wood Stockwell,
Isabel Thacher,
Mary Evelyn Thomas,
Annie Frederika Thulin,
Emily Persis Washburn,
Clara Louisa Wells,
Emma Angelia Woodsum.

DORCHESTER HIGH SCHOOL.

CLASSICAL COURSE.

Frank Wesley Burnham.

THREE YEARS' COURSE.

Boys.

David Marks Babcock,
Edward Danforth Bent,
Robert Foster Elder,
George Congdon Gorham, Jr.,
Walter Gardner H. Kendall,
William Love,
Stephen Arnold Douglas Monroe,
John Aiken Preston,
Lewis Carver Southard,
William Franklin Temple,
Josiah Ellis Tipping,
Robert Ballantyne Walker,
Frank Weston Whitcher.

Girls.

Susan Broughton Allbright,
Antoinette Parsons Brooks,
Ellen Almira Brown,
Cordelia Rosanna Capen,
Martha Ellen Clean,
Mary Elizabeth French,
Amy Roundy French,
Ella Frances Glover,
Maria Wardwell Hawes,
Hattie Louisa Holden,
Ella Florence Hopkins,
Ida Farnsworth Kendall,
Isabel Frances Lee,
Mary Ella Mann,
Caroline Frances Melville,
Anna Holden Payson,
Adelaide Pillsbury,
Priscilla Laura Plummer,
Annie French Pope,
Eugenia Morella Pratt,
Isabel Howe Robinson,
Ellen French Swan,
Elizabeth Warner Tileston,
Julia Tolman,
Esther Rebecca Whiton,
Elizabeth Esty Whittemore,
Maria Louisa Williams,
Lilian Taylor Witherbee,
Almena Augusta Wilson.

ADAMS SCHOOL.

Boys.

Henry Gardner Chandler,
John Francis Coyle,
John Joseph Corrigan,
Thomas Joseph Crahan,
Mather Thacher Denham,
Fred. Albert Dyer,

George Henry Frazier,
William Edward Kezer,
George A. McCormick,
Frank Gilman Morgan,
Daniel John Murphy,
Charles Warren Pigeon,
Charles L. Quimby,
William Percy Treadwell.

Girls.

Jessie Helen Bailey,
Jeannette H. Benson,
Carrie Louise Bird,
Mary Lizzie Blood,
Minnie P. Cracker,
Eliza Louise Darke,
Ella Elizabeth Frazier,
Jessie Fremont Frazier,
Augusta Ophelia Glines,
Rosa Elizabeth Gordon,
Carrie Stella Hahn,
Mary E. J. Healey,
Addie Geneva Hodges,
Emma Frances Joy,
Martha W. Kelley,
Lizzie A. C. Kelley,
Saran Ellen Merriam,
Mary Jane Sewell,
Lizzie G. Shepard,
Fannie J. Smith,
Emily M. Somerby,
Florence E. Towers,
Mary E. Wagner.

BIGELOW SCHOOL.

George T. Austin,
Frank E. Baker,
Charles F. Blanchard,
Luther A. E. Bond,
Thomas F. Burke,
George M. Carr,
Charles Cole,
William E. Davenport,
Patrick H. Dillon,
Albert E. Downs,
William H. Dyer,
Willis Fisher,
Frank J. Fitz Gibbon,
Edward F. Ford,
Charles H. Horton,
William F. Hughes,
William H. Kennington,
Henry W. Kennon,
William J. Knowles,
Charles S. Leffler,
Michael J. McCarty,
Peter A. McGill,
Timothy Mehegan,
Carlton J. Nichols,
Patrick M. O'Connor,
Benjamin Pope, Jr.,
Fred. H. Roberts,
Frank F. Taylor,
Walter A. Turner,
Albion P. White,
Cyrus F. Willard,
George F. Woodman,
William H. Wyman,
Frank A. Wilson.

BOWDITCH SCHOOL.

Annie M. Brennan,
Ellen M. Collins,
Elizabeth C. Daley,
Mary Doherty,
Ada J. Dowling,
Mary E. Driscoll,
Elizabeth F. Glavin,
Mary E. Leary,
Ellen J. G. Mahegan,
Mary A. McCarty,
Mary A. Moore,
Ellen L. Murphy,
Mary A. O'Brien,
Ellen M. Patterson,
Katie M. Power,
Annie M. Regan,
Annie J. Sullivan,
Mary A. Sullivan.

BOWDOIN SCHOOL.

Sarah S. Baker,
Zoe T. Balch,

Emma F. Boyce,
Mattie Bruce,
Essie J. Campbell,
Carrie M. Damrell,
Emma B. Davis,
Carrie D. Fairbanks,
Angie S. Forbush,
Agrippina Fortenbacher,
Ella A. Goodwin,
Nellie F. Greer,
Isabella E. Hale,
Minnie S. Hodges,
Clara E. Hudson,
Hattie S. Kimball,
Ida J. King,
Anne E. Loring,
Annie B. Middleby,
Emily M. Millett,
Jennie P. Mills,
Alice F. Munson,
Mary Palmer,
Louisa F. Renton,
Edith V. Robinson,
Addie E. Seavey,
Annie L. Souther,
Mary L. Willcox,
Ella A. Willey.

BOYLSTON SCHOOL.

Boys.

James J. Anderson,
William P. Burley,
William A. C. Cruse,
Luke F. Curley,
Thomas J. Graham,
John F. O'Neil,
Philip J. Riley,
Cornelius J. Scollard,
Henry A. Sullivan,

Girls.

Hattie E. Allison,
Rebecca Fisher,
Alie Greenberg,
Margaret J. Holland,
Rosa A. Higgins,
Mary F. Lambert,
Joanna A. Scollard,
Mary J. Travis,
Nellie M. White,
Annie T. Williams.

BRIMMER SCHOOL.

Ernest L. Ames,
Harry A. Bachelder,
Julius Bock,
William A. Brown,
Charles J. Buffum,
Archie M. Clark,
Alfred Walter Elson,
George Henry Fera,
Charles Firth,
Aaron Willis Gage,
Joseph McKean Gibbons,
Jacob Gottlob,
Louis E. G. Green,
Joseph Francis Heath,
William F. Hicks,
Thomas Joseph Keliher,
Arthur C. Lovejoy,
E. Wiley Marsh,
James Henry McCormack,
Kenneth A. MacLean,
James P. McGail,
Fred. Hamilton McLaughlin,
Ariel Meinrath,
William Neagle,
Thomas Alfred O'Neil,
Charles William Paradise,
Harry P. Parkerson,
Franklin F. Pickens,
Henry Schlimper,
Herbert E. Small,
Amandaus H. Sonnemann,
Louis Strauss,
Dennis J. Sullivan,
George F. Trowbridge,
Arthur M. Waitt,
Forrest E. Walker,
William S. Whiting,
Benjamin Cushing Willis,

Gustave Wrinderlich,
Frank Zoebisch.

CHAPMAN SCHOOL.

Boy.

Willie D. Porter.

Girls.

Sara E. Atwood,
Maria G. Clark,
Lizzie Crump,
Susan I. Damon,
Ada L. Elliott,
Alena J. Finlay,
Henrietta Gilchrist,
Elsie M. Gould,
Belle M. High,
Ella T. Loony,
Lizzie R. McKay,
Jeannie E. Metcalf,
Hattie J. Rice,
Abbie L. Rogers,
Hannah E. Shackford,
Florence Thompson,
Nellie B. Tucker,
Theresa A. Wehrle,
Maggie E. Woodin,
Josephine Young.

COMINS SCHOOL.

Boys.

Albert H. Bouvé,
Dennis B. Connell,
William E. Cose,
William H. Crosby,
Edward P. Currier,
William S. Davis,
Thomas Grady,
Nathaniel Hastings,
James E. Loobey,
Thomas F. Loughlin,
John M. McCarty,
Charles H. McDonald,
Henry G. McGowan,
William J. O'Connor,
Louis Rogers,
John A. Schroeffel,
John F. Shea,
Samuel F. Sutton,
John E. Tierney.

Girls.

Emma C. Albrecht,
Dora F. Atwood,
Flora C. Atwood,
Lizzie A. Bemis,
Ella Bradley,
Mary E. Crossin,
Ida P. Dawes,
Mary A. Doyle,
Ellen T. Egan,
Ida Engel,
A. Florence Emmons,
Catherine J. Fineran,
Hannah G. Fineran,
Lilla E. Folsom,
Emma Gerber,
Carrie E. Gilman,
Helen S. Hoxie,
Margaret E. Kelley,
Esther Kiley,
Annie S. Meserve,
Lewella J. Mustard,
Margaret J. Newsome,
Martha Elizabeth Ward,
Alice Wise,
Emily Zeigler.

DEARBORN SCHOOL.

Boys.

Henry Mortimer Allen,
Lewis Henry Bell,
Elbridge Winthrop Carleton,
Sylvanus Rich Cram,
Reuben Winslow Davenport,
Ferdinand George Decker,
Edwin Joseph Dolan,
George Edward Hersey,
George William Keates,
John Patrick Leach,

Benjamin Franklin Lord,
Samuel Bartlett Lynch,
John Franklin Neill,
Philip James O'Donnell,
Albert Carroll Orcutt,
Frank Cyrus Smith,
William Osborn Swan,
Edward Spencer Wentworth,
Lewis Beck White.

Girls.

Georgianna E. Agnew,
Ella F. Allen,
Lizzie Marion Carleton,
Rebecca Coulter,
Cora Dell Farrar,
Elizabeth A. Hunneman,
Effie Maria Jenkins,
Eva Matilda Keates,
Anna Jane Knight,
Jane Tresa Magee,
Emma Louisa Manning,
Ella Moody,
Nettie Gertrude Pevear,
Charlotte Johanna Weinz.

DUDLEY SCHOOL.

Elizabeth C. Bean,
Susan E. Coggan,
Annie F. Cordingly,
Ellen T. Costello,
Florence I. Drake,
Emma L. Foster,
Clara H. Glover,
Clara C. Grundin,
Annie S. Gullbrandson,
Alice G. Hall,
Stella N. Hobbs,
Annie W. Seaverns,
Emma M. Watson,
Annie J. Whelton.

DWIGHT SCHOOL.

Frank S. Allen,
Walter Austin,
Henry E. Babcock,
Ezra H. Baker,
Howard K. Burgess,
George S. Cartwright,
Edmund J. Duclos,
Frank W. Dyer,
Henry W. Estabrook,
Frank M. Eisbree,
Frederick A. Farrar,
John Foley,
Frank S. Frederick,
George J. Gentleman,
Edmund R. Grovenor,
Charles A. Harding,
George W. Hinckley,
William A. Hopkins,
Edward A. Hunt,
William A. Hyde,
John B. Kelley,
John B. Lamb,
Henry R. Leonard,
Frederick R. Loring,
George B. Mason,
Henry L. Millis,
Edward W. Morse,
Charles A. Morse,
Robert J. Mundy,
Louis A. Myerson,
John J. Nerney,
George Nickerson,
Harry H. Perrin,
Joseph M. Perry,
Frank A. Rhodes,
Isaac Rich,
William A. Rich,
William A. Sargent,
George A. Smith,
Henry D. Stanton,
Henry M. Taylor,
George T. Trumbul,
Charles H. Webber,
Herbert A. Wentworth.

ELIOT SCHOOL.

William D. Baker,
Jno. F. Browning,
Harvey N. Collison,

Arthur T. Dinsmore,
Jno. Dixon,
Andrew F. Garrett,
Charles H. Glawson,
Arthur E. Hersom,
Michael J. Houghton,
Michael Hunt,
James H. Jacobs,
William A. Perkins,
Andrew A. Porter,
William J. Ruddell,
Jno. J. Scanlan,
Fred. J. Smith,
Frank Stowers,
James F. Twombly,
William J. P. Welch,
James H. West,
James Wilkie.
George Willender.

EVERETT SCHOOL.

Lizzie L. Adams,
Mary W. Baker,
Carrie L. Brown,
Emma F. Briggs,
Carrie H. Bryant,
Gertrude W. Butman,
Gertrude A. Chandler,
Helen Cobb,
Alice A. Cundy,
Hattie E. Curtice,
Ida C. Flagg,
Ella L. French.
Katie M. Hale,
Alice A. Harding,
Mary S. Harris,
Lulu B. Heywood,
Lillie E. Heywood,
Cora M. Johnson,
Mary E. R. Jones,
Ella A. Leland,
Lottie N. Lothrop,
Emma Lynde,
Ella J. Lyon,
Ella L. Macomber,
Eleanor M. Magee,
Sarah A. Marlow,
Maria Louise McCleary,
Mary E. Murphy,
Eva Newhall,
Jennie M. O'Brien,
Annie J. Pecker,
Annie S. Pike,
Ella F. Prescott,
Ida Ramsdell,
Helen W. Rust,
Lizzie Sherer,
Nellie C. Snow,
Mabel C. Thayer,
Lizzie F. Waite,
Mary L. Woodward,
Mary F. Wright.

EVERETT SCHOOL. — (DORCHESTER.)

Boys.

Fred. C. Moseley,
Charles D. Pratt,
John B. Walker,
Frank Todd.

Girls.

Ella J. Cook,
Lulie L. Curtis,
Annie Glidden,
Grace B. Proctor,
Eugenie Walker.

FRANKLIN SCHOOL.

Matilda Abrams,
Sarah E. A. Adams,
Annie Avery,
Abby H. Babson,
Nellie L. Blanchard,
Lillian Botto,
Mary E. Bugbee,
Ida M. Burton,
Kate C. Capron,
Jessie G. Chater,
Isabella M. Commin,

Carrie A. Davis,
Laura M. Drisco,
Nellie L. Doe,
Ella W. Emery,
Maria S. Emery,
Millie P. Farrington,
Minnie G. Foster,
Emma A. French,
Sarah A. Frost,
Emma C. Grant,
Sarah F. Hill,
Ella C. Hutchins,
Helen M. Jameson,
Mary L. Jones,
Frances D. Newcomb,
Louise F. Polley,
Lizzie F. Putney,
S. Lizzie Wales,
Carrie C. Webster,
Carrie White,
Florence A. Wightman,
Nellie F. Wood.

GIBSON SCHOOL.

Boys.

Charles H. Phelps,
F. C. Randall.

Girls.

Annie F. Avery,
Josabella Fottler.

HANCOCK SCHOOL.

Mary A. Anderson,
Mary W. Blake,
Maggie A. J. Carr,
Mary L. Clark,
Florence E. Collier,
Ellen A. Coleman,
Eveline M. Coughlin,
Mary A. Egan,
Amelia C. Enos,
Helena G. Farren,
Mary L. Goodrich,
Letitia E. Gourley,
Ellen H. Griffin,
Katie E. Healey,
Elizabeth K. G. Hogan,
Matilda J. Kennemon,
Mary A. Kyle,
Ella M. Maynard,
Minnie E. McCartney,
Julia F. McCann,
Martha Nicholson,
Mary J. M. Paul,
Minnie E. Pitman,
Mary E. L. Porter,
Mary A. Raycroft,
Mary J. A. Thompson,
Margaret J. Watson,
Annie A. Williams,
Annie T. Winsor,
Mary A. P. Wren.

HARRIS SCHOOL.

Boys.

Charles W. Bradley,
J. Lodge Eddy,
William Elder,
Edward L. Knapp,
William Lynes,
Everett H. Sharp.

Girls.

Mary L. Alexander,
Fannie A. Buckpit,
Harriet A. Burditt,
Adeline J. Callender,
Mary S. Fifield,
Sarah R. Glass,
Caroline W. Horne,
Josephine A. Jones,
Mary A. Knapp,
Caroline M. Littlefield,
Jennie Reid,
Mary F. Shallenbach,
Alice Shepard,
Emma L. Smith,
S. Antoinette Whall,
Sarah W. Wilson.

LAWRENCE SCHOOL.

J. Walter Bachelor,
Matthew J. Barron,
George Aloysius Boyd,
Edward William P. Cahill,
John Francis Cochran,
Michael Conley,
John Currie,
Daniel Donovan,
Francis Joseph Dempsey,
Thomas M. Devine,
John T. Dodge,
James E. J. Dolan,
William M. Dowling,
Dennis Joseph Driscoll,
Edward Everett Duffee,
Charles Hamlin Dunton,
Charles Gardner,
Michael Joseph Galway,
Daniel Joseph Geary,
Patrick Griffin,
Francis George Haley,
Joseph Edward Hayes,
Francis Joseph Hayden,
Edward James Hughes,
Crozier Hurst,
William P. A. Lally,
Frank Lappen,
Joseph McCarron,
William McCarthy,
James F. McDonough,
Patrick John McGrath,
Frank Wilder McCobb,
Maurice Francis Meagher,
Charles E. Meins,
Thomas Francis Morrissey,
John Philip Mullen,
John Edward O'Roark,
John Parker,
Michael Thomas Reagan,
Thomas Slattery,
William Joseph Welch.

LEWIS SCHOOL.

Boys.

Charles Edwin Adams,
Charles Henry Bowditch,
Frederic F. Chadwick,
Henry Washington Doland,
Frank Matthew Foley,
Frederic S. Hunter,
Arthur L. Jacobs,
Henry Johnson,
Alfred Edwin King,
Franklin S. Leavitt,
Frank W. McCrea,
Patrick J. Mullen,
Byron G. Pearson,
William J. Reardon,
Edmund S. Rousmaniere,
Joseph A. Rumrill.

Girls.

Annie E. Aldrich,
Ida Louise Barton,
Grace Clara Brown,
Louesa Maeder Clark,
Sarah E. B. Davis,
Roxalana P. Edmands,
Eloise S. Edwards,
Lizzie L. Gray,
Ella M. Green,
Josephine J. Howe,
Emma W. James,
Harriet W. Leavitt,
Jennie McIntosh,
Annie F. Mayo,
Helen L. Moulton,
Grace W. Minns,
Martha A. Newton,
Elizabeth E. O'Connell,
Mary Richards,
Mary C. Ryan,
Annie J. Seaver,
Lucy C. Stafford,
Caroline A. Wadsworth.

LINCOLN SCHOOL.

Boys.

Allen Arnold,
Benjamin J. Bowen,
Alma C. Brainard,
William C. Cherrington,
Charles B. Crooker,
Albert T. DeLuce,
John A. Devine,
Frank L. Doolittle,
George F. Drew,
Harry Halden
Ed. F. Haynes,
Eugene P. Johnson,
George T. Kingman,
Frank G. McCoy,
Harry M. McDonald,
Fred. W. J. McGlinchey,
William A. Moffett,
George L. Neily,
Charles S. Paw,
Patrick F. Quinn,
Charles P. Renfrew,
Clarence O. Richards,
Thomas M. Smith,
Edwin E. Stetson,
Edwin R. Spinney,
James F. Welch.

Girls.

Flora L. Beckler,
Mary L. Bright,
Bridget E. Buckley,
Claudine E. Cherrington,
Mattie G. Clarke,
Addie S. Crafts,
Nellie B. Crooker,
Julia A. Dickerson,
Mary E. Harrington,
Nellie J. Jacobs,
Hannah L. McGlinchey,
Mary McNamara,
Phoebe W. Paige,
Annah L. Phippen,
Josephine E. Powers,
Laura S. Russell,
Susie H. Sloane,
Miriam B. Swett,
Mary E. Taft,
Ellen M. Wilkins.

LYMAN SCHOOL.

Boys.

Charles A. Ballou,
George E. Barkley,
Edward T. Currier,
Henry O. Fletcher,
George H. Flint,
James J. Griffin,
John Hagarty,
William Johnson,
George F. Kelly,
George F. Landrigan,
Thomas J. Lane,
John J. Moore.

Girls.

Emma L. Busell,
Adele B. Cline,
Mary W. Holbrook,
Therese C. Holmes,
Mary J. Keenan,
Kate A. Mason,
Josephine M. Pease,
Hattie Piper,
Hattie Shaw,
Mary A. Sheeran,
Abbie E. Wallis.

MATHER SCHOOL.

Boy.

John Murphy.

Girls.

Catherine D. Austin,
Annie J. Bacon,
Bertha Whittier Jacobs,
Mary M. McNulty,
Bessie Wall.

MAYHEW SCHOOL.

Edward J. Butler,
Charles E. Cunningham,
Charles Damrell,
Daniel F. Eagan,
Anson B. Edgerly,
Thomas W. C. Hoey,
Godfrey M. Hyams,
William F. Jarvis,
Hugh I. Kennedy,
Charles W. F. McDevitt,
Hugh Mullen,
John A. Perry,
James Robinson,
John B. P. Rosatto,
John H. N. Russell,
Frederic P. Taylor.

MINOT SCHOOL.

Boys.

Gardner Dennison,
William Ellery Hannum,
George Walter Mason,
Frederick M. Stearns.

Girle.

Mela Isabel Barrows,
Alice Rebecca Hayward,
Lucinda Ella Talbot.

NORCROSS SCHOOL.

Sadie Dean Baker,
Mary Elizabeth Brady,
Martha Grace Buckley,
Lizzie Frances Cliff,
Mary Ellen T. Conley,
Annie May Connor,
Maggie Louisa Curry,
Arabella Brown Cushing,
Emma Frances Crane,
Maggie Ann Duffer,
Mary Hannah Farnham,
Lizzie Ferdinand,
Mary Hannah Foote,
Jennie Chestnut Gibson,
Mary Godfrey,
Angela Hayes,
Carrie Ellis Hilliard,
Maggie Elizabeth Holland,
Emma Cordelia Howard,
Jennie Hutchinson,
Emma Winifred Hyland,
Delia Veronca Kelley,
Mary Elizabeth Lally,
Emma Frances Linton,
Eliza Agnes Maguire,
Fanny Amanda Keyser,
Annie Maria Mehegan,
Adela Hannah McKenny,
Annie Maria L. Munier,
Maria Louise G. Nelson,
Elizabeth Lyman Parker,
Kate Mary Quinn,
Nellie Maria F. Shea,
Minnie Ellen T. Shine,
Mary Ann Sullivan,
Alice Nelson Talpey,
Mary Carrie Turner,
Eva Caroline Watson,
Mary Catharine Walsh,
Lizzie Aloysius Welch,
Nellie Theresa Welsh,
Carrie Weiscopf.

PHILLIPS SCHOOL.

Ezra F. Bates,
William A. Brooks,
George E. Brown,
Nathan D. Clark,
George W. Connor,
Walter H. Cummings,
William A. Earle,
John B. Kane,
Frank G. Kellogg,
Flavill W. Kyle,
John J. McComb,
Charles W. Morse,
Charles H. Perry,
Fred A. Preble.

PRESCOTT SCHOOL.

Boys.

Joseph M. Condon,
Ciro Cummings,
Thomas L. Dunbar,
Morris Dunn,
Richard H. Finn,
George A. Harrington,
Herbert Loveland,
John Lynch,
William A. McCrillis,
John S. McLaughlin,
Ranald McQuarry,
Willard C. Morrison,
Lawrence Niles,
Jesse Pierce,
George H. Sampson,
George E. Snelling,
Walter J. Staples,
John Townsend,
Larkin Trull,
Charles L. Woodside.

Girls.

Eleanor G. Andrews,
Flora P. Brown,
Catharine F. Creelman,
Charlotte P. Evans,
Emma F. Gould,
Ida E. Halliday,
Idilla E. Kenney,
Susan J. Mayo,
Lizzie M. Morrisey,
Ina A. Pingree,
M. Louise Roby,
Helen M. Swain,
Isabelle M. Weeks.

QUINCY SCHOOL.

Kendall Lincoln Achorn,
John Henry Armstrong,
Thomas William Casey,
John Joseph Clark,
Jeremiah Coffey,
Jeremiah Joseph Connors,
Frederick Henry Coombs,
Oscar Abbott Drew,
Daniel James Fair,
Thomas William Gleeson,
Daniel Francis Hurley,
James Joseph Kelly,
John Henry Lally,
Peter Martin Lang,
James Joseph Larkin,
Thomas Patrick McCarthy,
Charles Moynihan,
John Francis Mungovan,
Thomas Joseph Murphy,
Philip Henry Quinn,
James Francis Sweeny,
William Henry Whitney.

RICE SCHOOL.

George Adams,
Frank F. Baldwin,
Edwin A. Bosworth,
Frank W. Bradford,
Willis S. Child,
George H. Clapp,
Charles H. Crockett,
James H. Dooling,
James H. Farless,
Joseph E. Gallagher,
George H. Healey,
Hiram A. Hitchcock,
Charles W. Janes,
Edward F. Keeler,
Henry T. Kimball,
Henry B. Lotts,
Ellis H. Marshall,
Patrick Quinlan,
Charles C. Ryder,
Joseph B. Sanford,
Henry R. Sargent,
William S. D. Smith,
John F. Souther,
William H. Swallow,
Harry G. Trull,
Frank L. Union

Renton Whidden,
Albert L. Whitman,
Merle St. C. Wright.

SHERWIN SCHOOL.

Boys.

Grenville Bacon, Jr.,
William Henry Bowles,
James Francis Cloney,
Joseph Warren Cogswell,
Edwin Allyn Howe,
Alden John Kasson,
Charles Francis Murphy,
George Franklin Rivinius,
Royal Wright Robinson,
Frank Joseph Stephens,
Julius Edgar Ward,
George Jarvis Wardwell.

Girls.

Annie Josephine Corrigan,
Maggie Cleary,
Delia Gibney,
Minnie Louisa Lincoln,
Lizzie Josephine McLaughlin,
Theresa Agnes McIver,
Mary Theresa Sheehan.

SHURTLEFF SCHOOL.

Fannie T. Bailey,
Edith S. Bartlett,
Ella F. Bradlee,
Nettie E. Brett,
Georgianna N. Brigham,
S. Louis Chandler,
Gertrude E. Danforth,
Cora L. Fairbank,
Grace D. Farrell,
Lillian M. Gustin,
M. Olivia Hammond,
Caroline J. Hertkorn,
Esther M. Hill,
Minnie Keenan,
Kitty A. Learned,
Annie C. Littlefield,
Theresa Lonergan,
Nellie L. McDonald,
Carrie E. Moffette,
Esther F. Nichols,
Alice M. Nolen,
Mary E. O'Connor,
Ella L. Pentland,
Fannie S. Pierce,
Isabella L. Quimby,
Ida Rae,
Amanda M. Stewart,
Annie F. Stinson,
Mary E. Tomilson,
Annie I. Tripp,
M. Emma White,
Annie Wright,
Lizzie A. Whitcomb.

STOUGHTON SCHOOL.

Boys.

Albert P. Davenport,
George Lowell Parker,
Arthur Augustus Hibbard.

Girls.

Clara Brown Cain,
Lizzie Hannah Crossland,
Mary Theresa Foley,
Nellie Sullivan.

TILESTON SCHOOL.

Boys.

John Conness, Jr.,
John H. Cook,
Clarence H. Cox.

Girls.

Ada L. Gates,
Grace Tavener,
Charlotte E. Walter.

WASHINGTON SCHOOL.

Walter William Donnelly,
Henry Mitchell Esselen,
Robert Henry Ferguson,

Charles Richard French,
William Forester Hunter,
William Windship Munroe,
George William O'Donnell,
Ernest James Richardson,
George Sparhawk,
August Christian Wallon,
Edwin Francis Warren.

WELLS SCHOOL.

Pauline E. Allen,
Sarah A. Alley,
Louise N. Blanchard,
Elmira C. Brady,
Hannah Clike,
Alice Collins,
Florence E. Dexter,
Mary A. Horgan,
Jennie M. Humphrey,
Blanche A. Marsters,
Emily Florence Moulton,
Susie T. Mullen,
Sarah A. Prescott,
Winnifred A. Rust,
Ellen T. Sullivan,
Elizabeth A. Tracy,
Lizzie C. Wilson,
Elizabeth Wright.

WINTHROP SCHOOL.

Mary E. Badlam,
Ella M. Bancroft,
Emily Benedict,
Sarah F. Bense,
Lucy L. Brown,
Mary C. Burgess,
Georgie E. Cayvan,
Lydia L. Darrow,
Annie A. Duclos,
Nellie C. Emerson,
Geneva E. Gott,
Anna M. Greer,
C. W. Learned,
Ada Leland,
Annie M. Letts,
Mary J. McDonald,
Carrie Merrill,
Lucy Merrill,
Charlotte E. Nowell,
Alice E. O'Neil,
Caroline E. Page,
Kate I. Parker,
Juliette F. Redlow,
Harriet A. Reed,
Helen A. Shaw,
Eliza J. Skehel,
Ella M. Smith,
Mary A. Snapp,
Annie D. Stinson,
Helena S. Stoehr,
Anna Wells,
Mary E. Wilder.

ROSTER.

BOSTON SCHOOL REGIMENT.

COMPOSED OF PUPILS OF THE LATIN, ENGLISH HIGH, ROXBURY HIGH, AND ROXBURY LATIN SCHOOLS,

Under the instruction of Lieut.-Col. Hobart Moore.

Colonel. — Arthur B. Denny, Latin School.
Lieutenant Colonel. — F. C. Brewer, English High School.

FIRST BATTALION. — LATIN SCHOOL.

Major. — M. Vassar Pierce.
Adjutant. — Frank W. Rollins.
Quartermaster. — Thomas F. Sherman.
Serjeant Major. — Preston H. Grover.

Company A.

Captain. — J. Q. A. Brett.
First Lieutenant. — Charles G. Currier.
Second Lieutenant. — Quincy Pierce.

Company B.

Captain. — Newell R. Campbell.
First Lieutenant. — Walter H. Russell.
Second Lieutenant. — Edwin L. Morse.

Company C.

Captain. — William L. Bell.
First Lieutenant. — Edw. J. Cutter.
Second Lieutenant. — Hayward W. Cushing.

Company D.

Captain. — J. Loring Cheney.
First Lieutenant. — Walter M. Cutter.
Second Lieutenant. — James W. Walker.

SECOND BATTALION. — ENGLISH HIGH SCHOOL.

Major. — William S. French.
Adjutant. — John B. Clapp.
Quartermaster. — Samuel E. Brown, Jr.
Serjeant Major. — Frank E. Peabody.

Company A.

Captain. — M. J. Sullivan.
First Lieutenant. — Lewis B. Porter.
Second Lieutenant. — Eugene D. Pierce.

Company B.

Captain. — Frederick W. Lincoln, Jr.
First Lieutenant. — Arthur B. Robinson.
Second Lieutenant. — Thomas W. Preston.

Company C.

Captain. — Frank E. Green.
First Lieutenant. — Clarbnce W. Barron.
Second Lieutenant. — Granville R. Farrar.

Company D.

Captain. — Charles J. Adams.
First Lieutenant. — Benjamin S. Palmer.
Second Lieutenant. — Frederick H. Prentiss.

Company E.

Captain. — John B. Babcock, Jr.
First Lieutenant — Clarence H. Carter.
Second Lieutenant. — Charles Everett.

THIRD BATTALION. — ENGLISH HIGH SCHOOL.

Major. — Benjamin F. P. Simons.
Adjutant. — Fred. A. McDonald.
Quartermaster. — James W. Daly.
Serjeant Major. — Frank F. Raymond.

Company A.

Captain. — George A. Taylor.
First Lieutenant. — Charles F. Drew.
Second Lieutenant. — Clifton Church.

Company B.

Captain. — Melville T. Marshall.
First Lieutenant. — Evelyn B. Goodsell.
Second Lieutenant. — George H. Hunneman.

Company C.

Captain. — Julian F. Witherell.
First Lieutenant. — Harry T. Upham.
Second Lieutenant. — Charles F. Somes.

Company D.

Captain. — Caleb E. Gowen.
First Lieutenant. — William J. Caton.
Second Lieutenant. — Henry N. Almy.

Company E.

Captain. — Antoine A. McAloon.
First Lieutenant. — Frank C. McKenna.
Second Lieutenant. — George E. Armstrong.

FOURTH BATTALION.

Major. — G. F. Pierce, Roxbury High School.
Adjutant. — A. Stone, Roxbury Latin School.
Quartermaster. — C. Franklin, Roxbury High School.
Serjeant Major. — M. Nevers, Roxbury High School.

Company A. — Roxbury High School.

Captain. — N. P. York.
First Lieutenant. — F. Spangler.
Second Lieutenant. — C. H. Walker.

Company B. — Roxbury High School.

Captain. — H. G. Allen.
First Lieutenant. — H. Bacon.
Second Lieutenant. — H. D. Hutchinson.

Company C. — Roxbury Latin School.

Captain. — N. N. Thayer.
First Lieutenant. — J. A. Wetherbee.
Second Lieutenant. — A. W. Spencer.

COMPANY D. — DORCHESTER HIGH SCHOOL.

Captain. — George C. Gorham.
First Lieutenant. — George O. Levitt.
Second Lieutenant. — Frank Coombs.

SUMMARY.

4 Battalions.
18 Companies.

Commissioned Officers,	68
Non-Commissioned Officers,	238
Musicians,	18
Privates,	737
Grand Total,	1,061

SCHOOL HOUSES.

Name.	*Location.*	*No. feet in lot.*	*When built.*	*No. of rooms.*	*Remarks.*
Adams	Summer street .	14,100	1856	18 and hall	
Atherton	Columbia street, Ward 16 . . .	4,727	1868	1	
Avon place . . .	Highlands . . .	10,057	1851	2	
Andrews	Genessee street	5,393	1848	3	
Austin	Paris street . .	5,360	1849	6	
Appleton	. . . .	18,454	1870	10	
Boylston	Washington st. .	15,073	1845	13 and hall	Ward Room No. 10 in this building.
Bowdoin	Myrtle street . .	4,892	1848	12	
Bowditch	South street . .	12,006	1862	14 and hall	
Bigelow	Fourth street .	12,660	1850	14 "	
Brimmer	Common street .	11,097	1843	14 "	
Baldwin	Grant place . .	6,139	1864	6	
Chapman	Eutaw street . .	13,040	1850	10 "	
Comins	Tremont street .	23,780	1856	13 "	Remodelled, 1869.
Comins Branch .	Smith street . .	6,952	1849	2	
" "	Francis street .	12,075	1853	2	Rebuilt, 1861.
Codman street .	Ward 16	43,560	1861	2	
Cheever	Thacher street .	2,003	1846	3	
Cottage place . .	Highlands . . .	13,500	1859	4	
Channing	Cove street . . .	7,140	1866	9	
Cook	Groton street .	4,922	1852	6	
Cushman	Parmenter street	. . . .	1867	16	
Clinch	F Street	13,483	1871	6	
Capen	Sixth street . .	12,375	1871	6	
Dwight	Springfield street	19,125	1857	14 and hall	
Dudley	Bartlett street .	7,950	1846	6	Rebuilt, 1865.
Dearborn	Dearborn court	38,636	1852	14 "	Rebuilt, 1870.
Dwight Pr. . . .	Rutland street .	7,850	1851	6	
Dean	Wall street . . .	3,649	1853	6	
Drake	C street	10,260	1869	6	
Eliot	N. Bennet street	11,077	1838	14 "	Rebuilt, 1860.
Everett	Sumner street . Ward 16 . . .	29,300	1855	7	
Everett	Camden street .	32,409	1860	14 "	

Name.	*Location.*	*No. feet in lot.*	*When built.*	*No. of rooms.*	*Remarks.*
East St. place . .	East street place	2,706	1849	4	
Emerson	Poplar street . .	5,924	1861	6	
Eustis street. . .	Boston Highlands	13,543	1848	4	Enlarged, 1858.
Franklin	Ringgold street .	16,439	1859	14 and hall	
Freeman	Charter street	5,247	1868	6	
Franklin place . .	Highlands . . .	8,098	1865	4	
Gibson	School st., Ward 16	44,800	1857	6	
Guild	East street. . . .	7,250	1866	12	
George street . .	Highlands	18,894	1861	6	
Grant	Phillips street . .	3,744	1852	4	
High and Latin .	Bedford street. .	12,980	1844	16 " "	Additional story added, 1863.
Hancock	Richmond street	28,197	1847	14 " "	
High	Kenilworth street	6,667	1861	4	Boston Highlands.
High	Dorch'r avenue, Ward 16. . . .	59,340	1870	6 " "	
Harris.	Adams street, Ward 16. . . .	37,150	1861	8 " "	
High Branch . .	Mason street . .	12,771	1848	14	Formerly the Normal school-house.
Hawes	Broadway. . . .	14,972	1823	8	
Heath street. . .	Highlands	10,557	1857	2	
Ingraham	Sheafe street . .	2,198	1848	3	
Lawrence	B and Third sts.	14,343	1856	14 " "	
Lincoln	Broadway . . .	17,560	1859	14 " "	
Lyman	Paris street . . .	26,200	1870	14 " "	Rebuilt, 1872.
Lewis	Sherman street .	27,830	1868	12 " "	
Mayhew	Hawkins street .	9,625	1847	10 " "	
Mather	Meeting House Hill	. . . .	1856	7	
Minot	Walnut street, Ward 16 . . .	16,790	1856	7	
Munroe street . .	Highlands	11,910	1854	2	Rebuilt, 1857.
Milldam	"	. . . .	1849	2	On land not owned by the city.
Mather	Broadway . . .	10,160	1842	10	
Mt. Pleasant av. .	Highlands	9,510	1847	2	
Normal	Newton street . .	30,520	1870	. . . . . .	Dedicated April 19, 1871.
Norcross	D street	12,075	1868	12 and hall	
N. Margin street	N. Margin street	1,661	1857	2	
Old Lyman . . .	Meridian street .	13,616	1846	. . . . . .	Br'ch Library and Ward-room 1, in this building.
Old High	Dorchester ave., Ward 16 . . .	34,460	. . .	4	Unoccupied.

Name.	*Location.*	*No. feet in lot.*	*When built.*	*No. of rooms.*	*Remarks.*
Oliver	Sumner street .	2,263	1843	2	
Phillips	Anderson street	11,190	1862	14 and hall	
Prescott	Prescott street .	39,952	1865	16 " "	
Pierpont	Hudson street .	4,216	1850	4	
Phillips street . .	Highlands . . .	20,595	1867	8	
Pormort	Snelling place .	4,373	1855	6	
Parkman	Silver street . .	5,306	1848	6	
Quincy	Tyler street . .	11,766	1847	14 " "	Burnt 1859. Rebuilt 1860. Bell tower built 1872.
Rice	Dartmouth st. .	27,125	1869	14 " "	
Rice Pr.	Concord street .	10,756	1845	10	Ward-room, Ward 11, in this building.
Shurtleff	Dorchester st. .	41,000	1869	14 " "	
Sherwin	Madison square	32,040	1870	16 " "	Dedicated Feb. 23, 1871.
Stoughton	River st., Wd. 16	29,725	1856	8	
Smith	Joy street . . .	1,938	1834	2	
Simonds	Broadway . . .	. . . .	1840	3	On Hawes School-house Lot.
Shurtleff Pr. . . .	Tyler street . .	3,900	1855	6	
Sharp	Anderson street	5,611	. . .	6	Ward-room, Ward 6, in this building.
Somerset street .		5,488	. . .	8	Formerly the Normal Training School.
Savage	Harrison avenue	5,537	1862	4	Ward-room 5 in this building.
Starr King . . .	Tennyson street	10,318	1870	10 " "	
Skinner	Fayette street .	5,242	1870	6	
Tileston	Norfolk street, Ward 16 . . .	83,640	1868	8 " "	
Ticknor	Washington Vil.	11,486	1865	12	
Tappan	Lexington street	4,025	1846	3	
Tuckerman . . .	City Point . . .	11,655	1850	6	Enlarged in 1861.
Thornton street	Highlands . . .	6,640	1847	2	
Vernon street . .	" . . .	7,675	1849	4	Enlarged in 1861.
Winthrop	Tremont street .	15,078	1855	14 " "	
Wells	Blossom street .	17,657	1868	10 " "	Ward-room, Ward 3, in this building.
Washington . . .	Washington st. .	14,390	1840	7	Enlarged, 1847.
Webb	Porter street . .	7,492	1853	6	
Webster	Webster street .	5,036	1852	6	
Ware	N. Bennet street	6,439	1862	4	Ward-room, Ward 2, in this building.

Name.	*Location.*	*No. feet in lot.*	*When built.*	*No. of rooms.*	*Remarks.*
Wait	Shawmut ave. .	10,974	1860	8	
Winthrop street .	Highlands . . .	9,775	1857	4	
Winchell	Blossom street .	5,000	1845	5	Remodelled, 1870.
Way street . . .	Way street . . .	2,508	1850	3	
Weston street . .	Highlands . . .	14,916	1854	4	
Yeoman street .	" . . .	18,200	1870	12	

In addition to the foregoing, the following rooms are occupied by schools, those marked (*) being hired at an annual rental of $9,381.00; the others are in buildings owned by the city.

Number of Rooms.	*Location.*
Two*	Chapel, Bennington street.
One*	26 Charles Street.
Three*	Rice building.
One*	Day's Chapel, Parker street.
Four	Armory building, Cooper street.
Two	Gunhouse.
One*	Putnam place.
Two*	Jenkins' Hall, Broadway, branch of Lawrence School.
Four*	Pemberton square, School for Deaf Mutes.
One*	Church on D street.
One*	E street church vestry.
One*	Dorchester avenue, opposite Broadway.
Two*	Monmouth street.
One*	Fourth street Church.
Two*	1419 Tremont street.
One*	Bennington street.
One*	Reed's Hall for Evening School.
One*	Hampden st. " " "
One*	Decker's Hall, Dorchester street.
One*	Richards' building, Meridian street.

ORGANIZATION

OF

SCHOOL COMMITTEE.

FOR 1873.

Hon. Henry L. Pierce, *Mayor, ex officio.*
Edward O. Shepard, *President of the Common Council, ex officio.*

Ward 1.

Henry S. Washburn,
George H. Plummer,
Reuben Peterson, Jr.,
Willard S. Allen,
John Noble,
Benj. F. Campbell.

Ward 2.

William J. Porter,
John W. Fraser,
James M. Badger,
Michael Moran,
George D. Ricker,
Thomas F. Mahan.

Ward 3.

John F. Jarvis,
Frank B. Clock,
Lucius Slade,
Samuel H. Wentworth,
James A. McDonough,
John E. Quinn.

Ward 4.

William O. Johnson,
A. Kendall Tilden,
Nathaniel B. Shurtleff,
Ezra Palmer,
Edward H. Dunn,
John T. Beckley.

Ward 5.

John P. Ordway,
George F. Bigelow,
Edward B. Rankin,
Henry J. Colman,
John M. Maguire,
John J. Murphy.

	Ward 6.
J. Baxter Upham,	James Reed,
Joseph Willard,	Hall Curtis,
Samuel K. Lothrop,	Charles C. Perkins.
	Ward 7.
Richard J. Fennelly,	Edward C. Leonard,
P. J. Whelton,	Hugh J. Toland,
Christopher A. Connor,	John E. Fitzgerald.
	Ward 8.
Henry P. Shattuck,	David W. Foster,
Solon Thornton,	George L. Chaney,
William Woods,	George E. Filkins.
	Ward 9.
John C. J. Brown,	Charles J. Prescott,
William T. Brigham,	John P. Reynolds,
Francis D. Stedman,	Charles Hutchins.
	Ward 10.
Abijah Richardson,	William Reed,
Jonathan A. Lane,	Charles L. Flint,
Lyman Mason,	William H. Baldwin.
	Ward 11.
Robert C. Waterston,	Stephen G. Deblois,
George H. Nichols,	William B. Merrill,
Wm. H. Learnard, Jr.,	Samuel B. Cruft.
	Ward 12.
Francis H. Underwood,	George A. Thayer,
Warren P. Adams,	Arthur H. Wilson,
John S. H. Fogg,	Joseph H. Allen.
	Ward 13.
Joseph A. Tucker,	James Morse,
George W. Adams,	Edward G. Morse,
George H. Lloyd,	John D. Carty.
	Ward 14.
George H. Monroe,	John O. Means,
Moody Merrill,	Ira Allen,
Joel Seaverns,	P. O'Meara Edson.

Ward 15.

George M. Hobbs,	Albert E. Dunning,
Charles K. Dillaway,	George F. Emery,
James Waldock,	Joseph O'Kane.

Ward 16.

Baylies Sanford,	John H. McKendry,
Frederick P. Moseley,	William T. Adams,
Benjamin Cushing,	John W. Porter.

Hon. Henry L. Pierce, Mayor, *President.*
John D. Philbrick, *Superintendent of Schools.*
Barnard Capen, *Secretary of the Board.*
George A. Smith, *Clerk of the Committee on Accounts.*
Alvah H. Peters, *Messenger.*

Rooms of the Board open from nine o'clock till six o'clock.

Office hour of the Superintendent: From 12½ o'clock to 1½ o'clock.

Office hour of the Clerk of the Committee on Accounts: From 12½ o'clock to 1½ o'clock.

STANDING COMMITTEES.

Elections.

Henry P. Shattuck, *Chairman,*
Hall Curtis,
Joseph Willard,
Baylies Sanford,
Reuben Peterson, Jr.
Jonathan A. Lane,
John E. Fitzgerald.

Rules and Regulations.

Lyman Mason, *Chairman,*
George H. Nichols,
George M. Hobbs,
John S. H. Fogg,
Nathaniel B. Shurtleff,
John W. Fraser,
William H. Baldwin.

Salaries.

J. Coffin Jones Brown, *Chairman,*
Ira Allen,
Henry S. Washburn,
William T. Adams,
Christopher A. Connor,
David W. Foster,
Charles J. Prescott.

Accounts.

William B. Merrill, *Chairman,*
William H. Learnard, Jr.,
George D. Ricker,
Moody Merrill,
Lucius Slade,
Warren P. Adams,
Francis D. Stedman.

Text-Books.

S. K. Lothrop, *Chairman,*
John F. Jarvis,
Charles Hutchins,
Samuel H. Wentworth,
Benjamin Cushing,
Ezra Palmer,
Charles L. Flint.

School Houses and School Sections.

Charles J. Prescott, *Chairman*,
Joseph A. Tucker,
John Noble,
John W. Porter,
George H. Monroe,
Hugh J. Toland,
Abijah Richardson.

Music.

J. Bazter Upham, *Chairman*,
John P. Ordway,
Robert C. Waterston,
Charles L. Flint,
William B. Merrlll,
Charles C. Perkins,
Warren P. Adams.

Printing.

George F. Bigelow, *Chairman*,
Joseph A. Tucker,
Solon Thornton,
Edward B. Rankin,
George W. Adams,
Arthur H. Wilson,
Joseph O'Kane.

Vocal and Physical Culture, and Military Drill.

Lucius Slade, *Chairman*,
J. Baxter Upham,
P. O'Meara Edson,
Henry P. Shattuck,
William O. Johnson,
William Woods,
George E. Filkins.

Drawing.

Charles C. Perkins, *Chairman*,
J. C. J. Brown,
Robert C. Waterston,
James Morse,
William Woods,
James Waldock,
George F. Bigelow.

Evening Schools.

Hall Curtis, *Chairman*,
George D. Ricker,
John S. H. Fogg,
William H. Baldwin,
James Waldock,
Willard S. Allen,
John H. McKendry.

Schools for Licensed Minors.

Ira Allen, *Chairman*,
Richard J. Fennelly,
Stephen G. Deblois,
Michael Moran,
A. Kendall Tilden.

School for Deaf Mutes.

George F. Bigelow, *Chairman*,
Henry S. Washburn,
Ira Allen,
Lucius Slade,
Nathaniel B. Shurtleff,
Samuel B. Cruft,
Frank B. Clock.

Kindergarten School.

William H. Baldwin, *Chairman*,
Hall Curtis,
Henry P. Shattuck,
John S. H. Fogg,
John P. Reynolds,
John W. Porter,
William Read.

Industrial Schools.

S. K. Lothrop, *Chairman*,
Hall Curtis,
Nathaniel B. Shurtleff,
Moody Merrill,
George F. Bigelow,
William T. Adams,
William H. Learnard, Jr.

LATIN AND HIGH SCHOOLS.

PUBLIC LATIN SCHOOL.

Bedford street.

COMMITTEE.

Henry S. Washburn, *Chairman.*
John P. Reynolds,
Michael Moran,
John F. Jarvis,
Nath'l B. Shurtleff,
John P. Ordway,
P. J. Whelton,
David W. Foster,
James Reed, *Secretary.*
Abijah Richardson,
Samuel B. Cruft,
George A. Thayer,
George W. Adams,
George H. Monroe,
George M. Hobbs,
William T. Adams.

TEACHERS.

Francis Gardner, *Head Master.*
Moses Merrill, *Master.*
Josiah G. Dearborn, *Master.*
George W. Minns, *Master.*
Charles J. Capen, *Master.*
Augustine M. Gay, *Master.*
George W. Pierce, *Master.*
Augustus H. Buck, *Master.*
John S. White, Jr., *Master.*
Joseph W. Chadwick, *Master.*

Prospère Morand, *Teacher of French.*
Julius Eichberg, *Teacher of Music.*
Chas. A. Barry, *Teacher of Drawing.*
Lieut.-Col. Hobart Moore, *Teacher of Military Drill.*

ENGLISH HIGH SCHOOL.

Bedford street.

COMMITTEE.

S. K. Lothrop, *Chairman.*
Charles J. Prescott,
James M. Badger,
John Noble, *Secretary.*
Lyman Mason,
Robert C. Waterston,

James A. McDonough,
William O. Johnson,
John M. Maguire,
Hugh J. Toland,
William Woods,
John S. H. Fogg,
James Morse,
Ira Allen,
James Waldock,
Frederick P. Moseley.

TEACHERS.

Charles M. Cumston, *Head Master.*
Moses Woolson, *Master.*
L. Hall Grandgent, *Master.*
Luther W. Anderson, *Master.*
Robert E. Babson, *Master.*
Albert Hale, *Master.*

SUB-MASTERS.

Charles B. Travis,
Charles J. Lincoln,
Charles H. Cumston,
Lucius H. Buckingham,
Joseph W. Keene,
John F. Casey,
John P. Brown,
Alonzo G. Whitman,
John O. Norris,
Le Roy Z. Collins,
Thomas J. Emery,
Charles O. Whitman.

Henry Hitchings, *Teacher of Drawing.*
Nicolas F. Dracopolis, *Teacher of French.*
Edward K. Clark, *Ass't Teacher of Drawing.*
Col. Hobart Moore, *Teacher of Military Drill.*

GIRLS' HIGH SCHOOL,

West Newton street.

COMMITTEE.

Charles L. Flint, *Chairman.*
Christopher A. Connor,
Willard S. Allen,
George D. Ricker,
Samuel H. Wentworth,
John T. Beckley,
George F. Bigelow,
Charles C. Perkins,
Warren P. Adams, *Secretary.*
Henry P. Shattuck,
Charles Hutchins,
Stephen G. Deblois,
E. G. Morse,
P. O'Meara Edson,
Charles K. Dillaway,
Baylies Sanford.

TEACHERS.

Samuel Eliot, *Head Master,*
Harriet E. Caryl, *Master's Assistant.*
Bessie T. Capen, *Teacher of Chemistry.*
Catharine Knapp, *Head Ass't.*
Margaret A. Badger, "
Emma A. Temple, "
Mary E. Scates. "

ASSISTANTS.

Adeline L. Sylvester,
Lucy O. Fessenden,
Adeline S. Tufts,
Emerette O. Patch,
S. Annie Shorey,
Ellen O. Swain,
Florena Gray,
Ellen M. Folsom,
Laura B. White,
Elizabeth C. Light,
Julia A. Jellison,
Alice M. Wellington,
Rebecca R. Joslin,
Augusta C. Kimball,
Mary E. Holbrook,
Lucy R. Woods,
Mary J. Allison,
Lillie B. Holbrook,

Mary L. B. Capen, *Laboratory Ass't.*
E. C. F. Krauss, *Teacher of German.*
Henry Hitchings, *Teacher of Drawing.*
Prospère Morand, *Teacher of French.*
Julius Eichberg, *Teacher of Music.*
Mercy A. Bailey, *Teacher of Drawing.*

NORMAL SCHOOL.

West Newton street.

COMMITTEE.

Charles Hutchins, *Chairman.*
Wm. H. Learnard, Jr.,
William B. Merrill,
John Noble, *Secretary.*
John P. Ordway,
Moody Merrill,
George A. Thayer.

TEACHERS.

Larkin Dunton, *Head Master.*
Florence W. Stetson, *Assistant.*
Annie J. Stoddard, *Assistant.*
Jenny H. Stickney, *Head Assistant.*
Bertha W. Hintz, *Assistant.*
Charles A. Barry, *Teacher of Drawing.*

ROXBURY HIGH SCHOOL.

COMMITTEE.

Moody Merrill, *Chairman.*
John E. Fitzgerald,
George H. Plummer,
Wm. J. Porter,
Lucius Slade,
Nath'l B. Shurtleff,
Henry J. Colman,
Hall Curtis,
George M. Hobbs, *Secretary.*
George L. Chaney,
Francis D. Stedman,
William Read,
Wm. H. Learnard, Jr.,
John S. H. Fogg,
Joseph A. Tucker,
William T. Adams.

TEACHERS.

Samuel M. Weston, *Head Master.*
M. L. Tincker, *Head Assistant.*

ASSISTANTS.

Emily Weeks,
Helen A. Gardner,
Clara H. Balch,
Benj. F. Nutting, *Teacher of Drawing.*
John F. Stein, *Teacher of German.*
Eliza D. Gardner,
Edna F. Calder.
Julius Eichberg, *Teacher of Music.*
M. de Maltchyce, *Teacher of French.*
Lieut.-Col. Hobart Moore, *Teacher of Military Drill.*

DORCHESTER HIGH SCHOOL.

COMMITTEE.

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John H. McKendry,
Moody Merrill,
John W. Porter, *Secretary.*
Benjamin Cushing,
Baylies Sanford,
Edward H. Dunn.

TEACHERS.

Elbridge Smith, *Head Master.*
Mary Wentworth Hall, *Head Ass't.*
Harriet Byron Luther, *Assistant.*
Julius Eichberg, *Teacher of Music.*
John Frederick Stein, *Teacher of German.*
Lieut.-Col. Hobart Moore, *Teacher of Military Drill.*
Rebecca Vinal Humphrey, *Assistant.*
Ellen Germaine Fisher, *Assistant.*
Mercy A. Bailey, *Teacher of Drawing.*
Charles De Legarlière, *Teacher of French.*

DEPARTMENT OF VOCAL MUSIC.

Julius Eichberg, General Supervisor of Music, and Teacher of Music in the High Schools, 154 Tremont street.

Luther W. Mason, Director of Music in the Primary Schools, 3 Cumston place. Address at the Rooms, City Hall.

H. E. Holt, Director of Music in the Grammar Schools, third, fourth, fifth, and sixth classes, 31 Ball street, Roxbury. Address at the Rooms, City Hall.

Joseph B. Sharland, Director and Teacher of Music in the Grammar Schools, first and second classes, 25 Hanson street.

Hiram Wilde, Assistant Teacher of Music, 77 Shawmut avenue.

DEPARTMENT OF DRAWING.

Walter Smith, Normal Art Instructor, and General Supervisor of Drawing, City Point, South Boston.

SPECIAL INSTRUCTORS.

Charles A. Barry, Latin School, and Normal School. Address at the City Hall.

Henry Hitchings, English High School and Girls' High School, Dedham.

Edward K. Clark, Assistant in English High School.

Mercy A. Bailey, Dorchester High School, and Girls' High School.

Benjamin F. Nutting, Roxbury High School.

These Instructors also supervise the Drawing in the Grammar and Primary Schools as far as their time allows.

FREE EVENING DRAWING SCHOOLS.

Walter Smith, Director of the Classes.
Monday, Tuesday, Thursday, and Friday, 7 to 9 P. M.

Appleton-street School-house.

G. W. Bartlett, Principal of the Cast Drawing School.

Charles Furneaux, Principal of the Free Hand Drawing School.

Starr King School-house, Tennyson street.

Daniel W. Willard, Principal of the Instrumental School.

Mason street.

C. W. Damon,
Willis H. Myrick.

Assistants at Appleton street and Tennyson street.

E. Paul,
George H. Young,
Frank B. Morse.
C. S. Ward,
J. L. Frisbe,

THE SCHOOL DISTRICTS

ARRANGED IN ALPHABETICAL ORDER.

ADAMS SCHOOL DISTRICT.

COMMITTEE.

George H. Plummer, *Chairman.*
Henry S. Washburn,
John Noble,
Reuben Peterson, Jr.,
Benj. F. Campbell, *Secretary.*
Willard S. Allen,
Edward H. Dunn.

ADAMS SCHOOL.

Robert C. Metcalf, *Master.*
Mary M. Morse, *Master's Assistant.*
Louisa E. Harris, *Head Assistant.*
Frank F. Preble, *Sub-Master.*
Martha E. Webb, *Head Assistant.*
Lucy A. Wiggin, *Head Assistant.*

ASSISTANTS.

Sarah M. Boyd,
Harriett Sturtevant,
Ellen M. Robbins,
Clara Robbins,
L. Frances Gardner,
Clara J. Doane,
Margaret E. Robbins.

PRIMARY SCHOOL.

Adams School-house.

Sarah A. Cook,
Mary H. Allen,
Eliza A. Wiggin,
Ellen James,
Mary E. Wiggin,
Anna E. Reed.

Sub-Committee, Messrs. Plummer and Dunn.

Sumner street.

Emily C. Morse.
Rosa L. Morse.

Sub-Committee, Mr. Washburn.

Webster street.

Grace E. Wasgatt.

Sub-Committee, Mr. Campbell.

BIGELOW SCHOOL DISTRICT.

COMMITTEE.

Warren P. Adams, *Chairman.*
Francis H. Underwood,
Christopher A. Connor,
Richard J. Fennelly,
P. J. Whelton, *Secretary.*
Arthur H. Wilson,
Hugh J. Toland,
George A. Thayer,
Joseph H. Allen.

BIGELOW SCHOOL.

Fourth street, Corner E street, South Boston.

Thomas H. Barnes, *Master.*
Alonzo Meserve, *Usher.*
Amelia B. Coe, *Head Assistant.*
Fred O. Ellis, *Sub-Master.*
Clara E. Farrington, *Master's Ass't.*

ASSISTANTS.

Eliza B. Haskell,
Ellen Coe,
Mary L. Lufkin,
Celinda Seaver,
Malvena Tenney,
Harriet A. Watson,
Henrietta L. Dwyer,
Lucinda P. Bowley,
Lucy C. Bartlett,
Abby J. Adams.

Washington Village Branch.

Leander Waterman, *Sub-Master.*

ASSISTANTS.

Mary Nichols,
Laura A. Neilson,
Mary L. Kinne,
Lucy M. Marsh.

PRIMARY SCHOOLS.

Hawes Hall, Broadway.

Anna C. Gill,
Alice Danforth,
Ann J. Lyon,
Mary E. Johnston,
Abby B. Kent,
Lucy E. T. Tinkham,
Mary P. Colburn,
Harriet A. Clapp.

Rear Hawes Hall.

Tiley A. Bolkcom,
Mary L. Howard,
Emily T. Smith.

Corner Dorchester and Fourth Streets.

Josephine B. Cherrington,
Sarah A. Graham.

BOWDITCH SCHOOL DISTRICT.

COMMITTEE.

John P. Ordway, *Chairman.*
John P. Reynolds,
George F. Bigelow,
William T. Adams,
John M. Maguire,
Henry J. Colman, *Secretary.*
Richard J. Fennelly,
Edward C. Leonard,
John W. Fraser,
John J. Murphy,
Edward B. Rankin.

BOWDITCH SCHOOL.

South Street.

Alfred Hewins, *Master.*
Mary M. T. Foley, *Head Assistant.*
Clarinda R. F. Treadwell, *Head Assistant.*
Francis R. Honey, *Master's Assistant.*
Susan H. Thaxter, *Head Assistant.*

ASSISTANTS.

Caroline W. Marshall,
Caroline E. Jennison,
Margaret E. Sheehan,
Eliza M. Evert,
Mary E. Nichols,
Ellen M. S. Treadwell,
Ruth H. Clapp.
Eliza A. Baxter, *Sewing Teacher.*

PRIMARY SCHOOLS.

Cove Street.

Amelia E. N. Treadwell.	*Sub-Committee,*	Mr. Maguire.
Octavia C. Heard.	"	Mr. Adams.
Ellen L. F. Collins.	"	Mr. Murphy.
Hannah E. G. Gleason.	"	Mr. Colman.
Maria J. Coburn.	"	Mr. Rankin.
Sophronia N. Herrick.	"	Mr. Fennelly.
Julia M. Driscoll.	"	Mr. Ordway.
Matilda Mitchell.	"	Mr. Bigelow.
Marian A. Flynn.	"	Mr. Leonard.

East Street.

Anna M. LeCain.	*Sub-Committee,*	Mr. Thayer.

BOWDOIN SCHOOL DISTRICT.

COMMITTEE.

Hall Curtis, *Chairman.*
J. Baxter Upham,
John F. Jarvis,
William O. Johnson,
James Reed,
John T. Beckley, *Secretary.*
Ezra Palmer,
Samuel H. Wentworth,
John E. Quinn,
Edward H. Dunn.

BOWDOIN SCHOOL.

Daniel C. Brown, *Master.*
Mary Young, *Head Assistant.*
Sarah J. Mills, *Head Assistant.*
Sarah O. Brickett, *Head Assistant.*

ASSISTANTS.

Eliza A. Fay,
Irene W. Wentworth,
Ada L. Cushman,
S. Frances Perry,
Sophia B. Horr,
Martha A. Palmer,
Mary F. Grant.
Catharine E. Bigelow, *Sewing Teacher.*

PRIMARY SCHOOLS.

Somerset Street.

C. Eliza Wason.	*Sub-Committee,*	Mr. Quinn.
Annie K. Adams.	"	Mr. Johnson.

Old Phillips School-house.

Sarah F. Russell.	*Sub-Committee,*	Mr. Jarvis.
Elizabeth R. Preston.	"	Mr. Reed.
Annie M. Heustis.	"	M. Upham.

26 *Charles Street.*

Clementine A. Baker.	*Sub-Committee,*	Mr. Curtis.

Joy Street.

Mary E. Ames.	*Sub-Committee,*	Mr. Dunn.

Blossom Street.

Olive Ruggles.	*Sub-Committee,*	Mr. Wentworth.
Julia T. Jellison.	"	Mr. Palmer.
Clara A. Robinson,	"	Mr. Beckley.
Lydia A. Isbell,	"	Mr. Johnson.

BOYLSTON SCHOOL DISTRICT.

COMMITTEE.

Solon Thornton, *Chairman.*
John P. Reynolds,
John P. Ordway,
Francis D. Stedman,
John M. Maguire,
Hugh J. Toland,
Abijah Richardson, *Secretary.*
Jonathan A. Lane.
William H. Baldwin,
Henry J. Colman,
George L. Chaney.

BOYLSTON SCHOOL.

Washington Street, near Dover Street.

John Jameson, *Master.*
Henry H. Kimball, *Sub-Master.*
Mary A. Davis, *Master's Head Assistant.*

ASSISTANTS.

Mary L. Holland,
Mary H. Cashman,
Bridget A. Foley,
—— ——,
Jane M. Bullard,
Eliza J. Dyar,
L. Ella Bacon,
Mary L. H. Gerry.

Caroline R. Dawes, *Sewing Teacher.*

PRIMARY SCHOOLS.

Way street.

Mary E. Sawyer.
Sub-Committee, Messrs. Thornton and Baldwin.
Charlotte L. Young.
Sub-Committee, Messrs. Reynolds and Lane.
Emma K. Youngman.
Sub-Committee, Messrs. Chaney and Richardson.

Genessee street.

Susan H. Chaffee.
Sub-Committee, Messrs. Stedman and Toland.
Harriet M. Bolman.
Sub-Committee, Messrs. Richardson and Colman.
Anna T. Corliss.
Sub-Committee, Messrs. Ordway and Maguire.

BRIMMER SCHOOL DISTRICT.

COMMITTEE.

J. Coffin Jones Brown, *Chairman.*
Henry P. Shattuck,
Charles Hutchins,
William Woods,
Joseph Willard,
John J. Murphy,
Charles J. Prescott, *Secretary.*
Solon Thornton,
Samuel B. Cruft,
George L. Chaney,
George L. Filkins.

BRIMMER SCHOOL.

Joshua Bates, *Master.*
T. H. Wason, *Usher.*
Abba D. Hawkes, *Head Assistant.*
E. Bentley Young, *Sub-Master.*
Rebecca L. Duncan, *Master's Assistant.*

ASSISTANTS.

Kate C. Martin,
Luthera W. Bird,
Annie P. James,
Mercy A. Davie,
Helen L. Bodge,
Mercy T. Snow,
Amanda Snow,
Caroline J. Spaulding,
Sarah J. March,
Annie M. Chambers.

PRIMARY SCHOOLS.

Starr King School, Tennyson street.

Rebecca J. Weston.	*Sub-Committee,*	Mr. Wood.
Anna E. English.	"	Mr. Murphy.
Lucy H. Symonds.	"	Mr. Chaney.
Sarah Farley.	"	Mr. Filkins.
H. Ellen Boothby.	"	Mr. Prescott.
Sarah R. Bowles.	"	Mr. Shattuck.
Eliza E. Foster.	"	Mr. Thornton.

Skinner School, corner Fayette and Church streets.

Frances B. Dewey.	*Sub-Committee,*	Mr. Hutchins.
Emma F. Burrill.	"	Mr. Willard.
Eliza F. Moriarty.	"	Mr. Prescott.
Deborah K. Burgess.	"	Mr. Cruft.
Malvina R. Brigham.	"	Mr. Chaney.

CHAPMAN SCHOOL DISTRICT.

COMMITTEE.

Willard S. Allen, *Chairman.*
Henry S. Washburn,
John Noble,
Benjamin F. Campbell,
Edward H. Dunn, *Secretary.*
Reuben Peterson, Jr.,
George H. Plummer.

CHAPMAN SCHOOL.

Eutaw street, East Boston.

George R. Marble, *Master.*
Mary E. Allen, *Master's Assistant.*
Maria D. Kimball, *Head Assistant.*
Orlendo W. Dimick, *Sub-Master.*
Sara F. Tenney, *Head Assistant.*
Jane F. Reid, *Head Assistant.*

ASSISTANTS.

Sarah T. Synett,
Judith P. Meader,
Lucy E. Woodwell,
Harriet E. Morrill,
Lizzie M. Gregory,
Mary E. Buffum.

Annie J. Noble, *Sewing Teacher.*

PRIMARY SCHOOLS.

Webb School, Porter street.

Mary A. Shaw,
Caroline S. Litchfield,
Helen T. Higgins,
Abby D. Beal,
Ada D. Prescott,
Mary E. Reid.

Sub-Committee, Messrs. Allen and Campbell.

Tappan School, Lexington street.

Harriet C. Bates,
Marietta Duncan.
Mary C. Hall,

Sub-Committee, Mr. Campbell.

Monmouth street.

Hannah F. Crafts.

Sub-Committee, Mr. Allen.

COMINS SCHOOL DISTRICT.

COMMITTEE.

George M. Hobbs, *Chairman.*
George F. Emery,
Joel Seaverns,
James Morse,
James Waldock,
Charles K. Dillaway, *Secretary.*
Albert E. Dunning,
George H. Monroe,
Joseph O'Kane,
John D. Carty.

COMINS SCHOOL.

Tremont street, corner of Gore Avenue.

Daniel W. Jones, *Master.*
Julia A. Scribner, *Master's Assistant.*
Almira W. Chamberline, *Head Assistant.*
Alfred Bunker, *Sub-Master.*
Dora O. Wait, *Master's Assistant.*
Eliza C. Fisher, *Head Assistant.*
Florence E. Tilton, *Head Assistant.*

ASSISTANTS.

Martha A. Cummings,
Adelina May,
Julia A. C. Gray,
Emma E. Towle,
Annie L. Hudson,
Lillian E. Davis,
Charlotte P. Williams,
Delia M. Upham,
E. Josephine Page,
Emily Swain,
S. Lizzie Lovell,
Penelope G. Hayes.
Delia Mansfield, *Sewing Teacher.*

PRIMARY SCHOOLS.

Phillips street.

Annie E. Clark, Caroline L. Bicknell.
Sub-Committee, Mr. Waldock.
Sarah E. Haskins. *Sub-Committee*, Mr. Carty.
Kate M. Murphy, Amelia F. Boston.
Sub-Committee, Mr. Morse.
M. Louisa Cummings. *Sub-Committee*, Mr. Carty.
Caroline M. Brackett. " Mr. Seaverns.
Sarah B. Bancroft. " Mr. O'Kane.

Cottage place.

Elizabeth Johnson, Adaline Beal.
Sub-Committee, Mr. O'Kane.
Caroline D. Putnam, ——— ———
Sub-Committee, Mr. Dunning.

Heath street.

Jane B. Lawrence. *Sub-Committee*, Mr. Dillaway.
Sarah J. Cook. " Mr. Monroe.
Ellen M. Holt, Emma Waldock.
Sub-Committee, Mr. Emery.

Francis street.

Caroline A. Gragg. *Sub-Committee*, Mr. Dillaway.

DEARBORN SCHOOL DISTRICT.

COMMITTEE.

James Morse, *Chairman.*
Ira Allen,
John O. Means,
Moody Merrill,
Joseph A. Tucker,
George F. Emery,
George W. Adams, *Secretary.*
George H. Lloyd,
Joel Seaverns,
John D. Carty,
Edward G. Morse.

DEARBORN SCHOOL.

Dearborn place.

William H. Long, *Master.*
Harlan P. Gage, *Sub-Master.*
L. Anna Dudley, *Master's Assistant.*
Philena W. Rounseville, *Head Assist.*
Harriet E. Burrell, *Head Assistant.*
Evelyn L. Holbrook, *Head Assistant.*

ASSISTANTS.

Cynthia G. Melvin,
Sarah H. Hosmer,
Anne M. Backup,
Elizabeth M. Wood,
Phebe H. Simpson,
Mary E. McCarty,
Frances L. Bredeen,
Clara T. Fisher,
Bell J. Dunham,
Elizabeth R. Wallis,
Mary F. Walsh.
Catherine G. Hosmer, *Sewing Teacher.*

PRIMARY SCHOOLS.

Eustis street.

Mary F. Neale, Abby L. Baker.
Sub-Committee, Mr. J. Morse.

Clarabel E. Chapman, Kate M. Wallace.
Sub-Committee, Mr. Lloyd.

George street.

Mary M. Sherwin, Mary C. Smith.
Sub-Committee, Mr. E. G. Morse.

Emily M. Pevear, Flora J. Cutter.
Sub-Committee, Mr. Means.

Clara F. Conant, Mary E. Aldrich.
Sub-Committee, Mr. Carty.

Yeoman street.

Anna M. Balch, Susan F. Rowe.
Sub-Committee, Mr. Allen.

Ellen M. Oliver, Mary E. Mason.
Sub-Committee, Mr. Adams.

Ada L. McKean, Annie M. Croft.
Sub-Committee, Mr. Merrill.

Louise D. Gage. *Sub-Committee*, Mr. Seaverns.

DORCHESTER EVERETT SCHOOL DISTRICT.

COMMITTEE.

Frederick P. Moseley, *Chairman.*
Joseph Willard,
Nath'l B. Shurtleff.
Benjamin Cushing,
Baylies Sanford,

DORCHESTER EVERETT SCHOOL.

Sumner street.

Roland F. Alger, *Master.* —— ———, *Master's Assistant.*

ASSISTANTS.

Helen M. Hills,
Sarah M. Bearse.
Anna M. Foster,

PRIMARY SCHOOLS.

Sumner street.

Cora L. Etheridge,
Marion W. Brooks.
Annie W. Ford,

DWIGHT SCHOOL DISTRICT.

COMMITTEE.

William H. Learnard, Jr., *Chairman.*
Robert C. Waterston,
William B. Merrill,
George H. Nichols,
Lyman Mason,
William H. Baldwin.
Stephen G. Deblois, *Secretary.*
John W. Porter,
Abijah Richardson,
Samuel B. Cruft,
George L. Chaney,

DWIGHT SCHOOL.

West Springfield street.

James A. Page, *Master.*
Walter S. Parker, *Usher.*
Margaret P. Kelley, *Head Assistant.*
Silas H. Haskell, *Sub-Master.*
Ruth G. Rich, *Master's Assistant.*

ASSISTANTS.

Mary C. R. Towle,
Elizabeth J. Kelley,
——— ———,
Mary E. Trow,
Laura A. Pendleton,
Caroline E. Jones,
Amelia M. Hickley,
Emily F. Carpenter.

PRIMARY SCHOOLS.

Rutland street.

Augusta A. Davis.	*Sub-Committee,*	Mr. Waterston.
Martha B. Lucas.	"	Mr. Richardson.
Sarah E. Crocker.	"	Mr. Deblois.
Henrietta Draper.	"	Mr. Nichols.
Clara B. Gould.	"	Mr. Chaney.
Anna Severance.	"	Mr. Cruft.

ELIOT SCHOOL DISTRICT.

COMMITTEE.

George D. Ricker, *Chairman.*
James M. Badger,
Lucius Slade,
John W. Fraser,
James A. McDonough,
William J. Porter, *Secretary.*
Frank B. Clock,
Nathaniel B. Shurtleff,
Michael Moran,
Thomas F. Mahan.

ELIOT SCHOOL.

North Bennet Street.

Samuel W. Mason, *Master.*
Granville S. Webster, *Usher.*
Adolin M. Steele, *Head Assistant.*
Walter H. Newell, *Sub-Master.*
Frances M. Bodge, *Head Assistant.*

ASSISTANTS.

Elizabeth M. Turner,
Kate L. Dodge,
M. Ella Wilkins,
Clara A. Newell,
Mary E. Hanney,
Hannah M. Seavey.
O. Augusta Welch,
Mary Heaton,
Clara Winning,
Emily F. Marshall,
Frances Giles.

PRIMARY SCHOOLS.

Snelling place.

Harriet S. Boody.	*Sub-Committee,*	Mr. Ricker.
Mary A. J. Robinson.	"	Mr. Porter.
Cleone G. Tewksbury.	"	Mr. Badger.
Harriet E. Lampee.	"	Mr. McDonald.
Sophia Shepard.	"	Mr. Ricker.
Sarah A. Winsor.	"	Mr. Mahan.

Charter street.

Ellen Fitzgerald.	*Sub-Committee,*	Mr. Fraser.
J. Ida Monroe.	"	Mr. Badger.
Juliaette Davis.	"	Mr. Porter.
Sarah Ripley.	"	Mr. Slade.
Julia A. Cutts.	"	Mr. Fraser.
Eliza Brintnall.	"	Mr. Clock.

North Bennet street.

Ann A. Coleman.	*Sub-Committee,*	Mr. Mahan.
Mary E. Barrett.	"	Mr. Moran.
Kate S. Sawyer.	"	Mr. Shurtleff.
Adelaide E. Badger.	"	Mr. Ricker.

EVERETT SCHOOL DISTRICT.

COMMITTEE.

Robert C. Waterston, *Chairman.*
Lyman Mason,
Wm. H. Learnard, Jr.,
William B. Merrill,
George H. Nichols,
Stephen G. Deblois, *Secretary.*
William H. Baldwin,
William T. Brigham,
Samuel B. Cruft,
Jonathan A. Lane.

EVERETT SCHOOL.

West Northampton street.

George B. Hyde, *Master.*
S. Flora Chandler, *Head Assistant.*
Janet M. Bullard, *Head Assistant.*
Margaret E. Johnson, *Master's Assistant.*
Anna C. Ellis, *Head Assistant.*

ASSISTANTS.

Maria S. Whitney,
Mary A. Gavett,
Ann R. Gavett,
Louisa M. Alline,
E. L. P. Shannon,
Susan S. Foster,
Abby C. Haslet,
Eva M. Keller,
Clara Nelson,
Sarah W. Pollard.

Martha A. Sargent, *Sewing Teacher.*

PRIMARY SCHOOLS.

West Concord street.

Eliza C. Gould.	*Sub-Committee,*	Mr. Nichols.
Mary H. Downe.	“	Mr. Mason.
Mary A. Crocker.	“	Mr. Merrill.
Alice E. Shedd.	“	Mr. Baldwin.
Caroline S. Lamb.	“	Mr. Learnard.
Lydia A. Sawyer.	“	Mr. Lane.
Almira S. Johnson.	“	Mr. Waterston.
Hannah M. Coolidge.	“	Mr. Cruft.
Emma Halstrick.	“	Mr. Deblois.
Lydia F. Blanchard.	“	Mr. Lane.

FRANKLIN SCHOOL DISTRICT.

COMMITTEE.

Francis D. Stedman, *Chairman.*
William T. Brigham,
Wm. H. Learnard, Jr.,
Charles Hutchins,
Charles L. Flint,
George H. Nichols,
Abijah Richardson, *Secretary.*
Stephen G. Deblois,
William H. Baldwin,
John H. McKendry,
William Read,
Jonathan A. Lane.

FRANKLIN SCHOOL.

Ringgold street.

Granville B. Putnam, *Master.*
Jane S. Tower, *Master's Assistant.*
Isabella M. Harmon, *Head Assistant.*
Sarah A. Gale, *Head Assistant.*
Catharine T. Simonds, *Head Assistant.*

ASSISTANTS.

Mary L. Masters,
Martha J. Burge,
Margaret E. Schouler,
P. Catharine Bradford,
Mary A. Mitchell,
Elizabeth J. Brown,
Caroline A Mason,
Sarah D. Hamblin,
K. E. Blanchard,
Annie E. Parker.
Elizabeth D. Cutter, *Sewing Teacher.*

PRIMARY SCHOOLS.

Groton Street.

Helen M. Faxon.	*Sub-Committee,*	Mr. Richardson.
Georgiana A. Abbott.	"	Mr. Hutchins.
Margaret Crosby.	"	Mr. Deblois.
Caroline A. Miller.	"	Mr. Learnard.
Lucy A. Cate.	"	Mr. Read.
Isadora Page.	"	Mr. Lane.

GIBSON SCHOOL DISTRICT.

COMMITTEE.

Baylies Sanford, *Chairman,*
Joseph Willard,
Benjamin Cushing,
Frederick P. Moseley,
Nathaniel B. Shurtleff.

GIBSON SCHOOL.

School Street, Dorchester.

William E. Endicott, *Master.*
Elizabeth E. Shove, *Assistant.*
Emma L. Howe, *Head Assistant.*
Charlotte E. Baldwin, *Assistant.*

ATHERTON INTERMEDIATE.

Green Street.

Ella S. Wales, *Head Assistant.*

PRIMARY SCHOOLS.

School Street (Dorchester).

E. Louise Brown,
Ella Whittredge.

Sub-Committee, Mr. Sanford.

Green Street.

Edna L. Gleason.

Sub-Committee, Mr. Sanford.

HANCOCK SCHOOL DISTRICT.

COMMITTEE.

Lucius Slade, *Chairman.*
Geo. D. Ricker,
James M. Badger,
John W. Fraser,
William J. Porter,
James A. McDonough, *Secretary.*
Michael Moran,
Thomas F. Mahan,
Edward H. Dunn,
John T. Beckley,
Charles C. Perkins.

HANCOCK SCHOOL.

Parmenter Street.

James W. Webster, *Master.*
Emily F. Fessenden, *Head Assistant.*
Martha F. Winning, *Head Assistant.*
Ellen C. Sawtelle, *Master's Assistant.*
Ellen A. Hunt, *Head Assistant.*

ASSISTANTS.

Amy E. Bradford,
Josephine M. Robertson,
Clara E. Bell,
Mary E. F. McNeil,
Helen M. Hitchings,
Susan E. Allen,
Mary E. Skinner,
Sophia L. Sherman.

Cushman Building, Parmenter Street.

Marie L. Macomber, *Head Assistant.*

ASSISTANTS.

Achsah Barnes,
Annie E. Caldwell,
Olive M. E. Rowe,
Anna N. Jacobs.
Mary H. Cheney, *Sewing Teacher.*

PRIMARY SCHOOLS.

Cushman School, Parmenter street.

Sarah E. Ward,	*Sub-Committee,*	Mr. Perkins.
Adeline S. Bodge.	"	Mr. McDonough.
Harriet M. Fraser.	"	Mr. Fraser.
Augusta H. Barrett.	"	Mr. Badger.
Rosanna B. Raycroft.	"	Mr. Beckley.
Mary L. Desmond.	"	Mr. Porter.
Mary J. Clark.	"	Mr. Dunn.
Marcella O. Halliday.	"	Mr. Moran.
Sarah F. Ellis.	"	Mr. Dunn.
Elizabeth A. Fisk.	"	Mr. Slade.
Maria A. Gibbs.	"	Mr. Moran.

Cooper street.

Lucy A. Pike.	*Sub-Committee,*	Mr. Porter.
Teresa M. Gargan.	"	Mr. McDonough.

Thacher street.

Sarah L. Shepherd.	*Sub-Committee,*	Mr. Badger.
Sarah J. Copp.	"	Mr. Fraser.
Lucy C. Flynn.	"	Mr. Ricker.

Ingraham School, Sheafe street

Josephine B. Silver.	*Sub-Committee,*	Mr. Mahan.
Martha F. Boody.	"	Mr. Mahan.
Esther W. Mansfield.	"	Mr. Ricker.

HARRIS SCHOOL DISTRICT.

COMMITTEE.

William T. Adams, *Chairman.*
J. H. McKendry,
John W. Porter, *Secretary.*
Willard S. Allen,
John C. J. Brown.

HARRIS SCHOOL.

Corner of Adams and Mill streets.

Edwin T. Horne, *Master.*
Ann Tolman, *Head Assistant.*

ASSISTANTS.

Elizabeth P. Boynton,
J. Annie Bense,
Sarah E. Hearsey,
Marion B. Sherburne.
Mrs. A. S. Ryder, *Sewing Teacher.*

PRIMARY SCHOOLS.

Harris School-house.

Marion B. Sherburne.
Anne M. Gilbert.
Mary C. Edes.

Sub-Committee, Mr. Porter.
" Mr. McKendry.
" Mr. Adams.

LAWRENCE SCHOOL DISTRICT.

COMMITTEE.

Hugh J. Toland, *Chairman.*
Warren P. Adams,
Christopher A. Connor,
John S. H. Fogg,
John E. Fitzgerald,
P. J. Whelton, *Secretary.*
Richard J. Fennelly,
George A. Thayer,
Edward C. Leonard.

LAWRENCE SCHOOL.

B street, corner of Third street.

Amos M. Leonard, *Master.*
Delwin A. Hamlin, *Sub-Master.*
Henry L. Clapp, *Usher.*
G. C. Emery, *Usher.*
Alice Cooper, *Master's Assistant.*
Emma P. Hall, *Head Assistant.*

ASSISTANTS.

Mary E. H. Ottiwell,
Abby C. Burge,
Margaret A. Gleason,
Mary A. Conroy,
Mary W. Bragdon,
Filena Hurlbutt,
Martha S. Damon,
Margaret Holmes,
Margarette A. Moody,
Catherine M. Lynch,
Mary E. Stubbs,
M. Louise Gillette.

PRIMARY SCHOOLS.

Broadway, between B and C streets.

Mary A. Montague.	*Sub-Committee,*	Mr. Fogg.
Lucy M. Cragin.	"	Mr. Whelton.
Anna M. Elwell.	"	Mr. Leonard.
Ada A. Bradeen.	"	Mr. Adams.
Willietta Bicknell.	"	Mr. Toland.
Elizabeth S. Lakeman.	"	Mr. Connor.
M. E. Witherell.	"	Mr. Fennelly.
Elizabeth A. McGrath.	"	Mr. Thayer.
Ann E. Newell.	"	Mr. Fitzgerald.
Ophelia S. Newell.	"	Mr. Connor.
Sarah M. Brown.	"	Mr. Toland.
Alice W. Baker.	"	Mr. Fennelly.

LEWIS SCHOOL DISTRICT.

COMMITTEE.

Joel Seaverns, *Chairman.*
George H. Monroe,
P. O'Meara Edson,
Moody Merrill,
Geo. M. Hobbs,
Edward G. Morse, *Secretary.*
Charles K. Dillaway,
George H. Lloyd,
Frederick P. Moseley,
Joseph O'Kane,
Joseph A. Tucker.

LEWIS SCHOOL.

Corner of Dale and Sherman streets.

W. L. P. Boardman, *Master.*
Chas. F. King, *Sub-Master.*
Sarah E. Fisher, *Master's Assistant.*
Eunice C. Atwood, *Head Assistant.*
Elizabeth S. Morse, *Head Assistant.*

ASSISTANTS.

Emily B. Eliot,
Henrietta M. Young,
Maria L Miller,
Lucetta F. Bean,
Louisa J. Hovey,
Susan A. Dutton,
Martha C. Gerry,
Annie E. Boynton,
Malvina L. Sears.

PRIMARY SCHOOLS.

Thornton street.

Joanna Monroe.
Alice C. Pierce.

Sub-Committee, Mr. Hobbs.
" Mr. O'Kane.

Winthrop street.

Frances N. Brooks.
Eliza J. Goss.
Helen Crombie.
Caroline Eliot.

Sub-Committee, Mr. Merrill.
" Mr. E. G. Morse.
" Mr. Seaverns.

Monroe street.

A. B. Russell.
Maria L. Burrill.

Sub-Committee, Mr. Dillaway.
" Mr. Lloyd.

Mount Pleasant avenue.

Frances H. C. Bradley,
Eloise B. Walcott.

Sub-Committee, Mr. Tucker.

LINCOLN SCHOOL DISTRICT.

COMMITTEE.

George A. Thayer, *Chairman.*
Francis H. Underwood,
John S. H. Fogg,
Warren P. Adams,
Edward C. Leonard, *Secretary.*
Arthur H. Wilson,
J. H. Allen,
Hugh J. Toland.

LINCOLN SCHOOL.

Broadway, near K street.

C. Goodwin Clark, *Master.*
Clara S. Nye, *Master's Assistant.*
Lydia Curtis, *Head Assistant.*
Alonzo G. Ham, *Sub-Master.*
Mary E. Balch, *Head Assistant.*
Margaret J. Stewart, *Head Assistant.*

ASSISTANTS.

Harriet E. Marcy,
Vodisa J. Comey,
Emogene F. Willett,
Susan Carty,
Myra S. Butterfield,
Abby M. Holder,
Martha B. Dinsmore,
Ellen R. Wyman,
Helen E. Head.

CAPEN SCHOOL.

Sarah C. Winn,	—— ———.

Margaret Reid, *Sewing Teacher.*

PRIMARY SCHOOLS.

City Point, Fourth street, near L.

Elizabeth M. Easton,
Mary A. Crosby,
Matilda Stevens,
Emma L. B. Hintz,
Josephine F. Krogman,
Mary Cutler.

Sub-Committee, Messrs. Underwood, Wilson, and Allen.

Capen School, corner of I and Sixth streets.

Laura J. Gerry,
Susan Hutchinson,
Mary E. Powell,
Ella M. Warner,
Mary H. Faxon.

Sub-Committee, Messrs. Thayer, Fogg, and Adams.

LYMAN SCHOOL DISTRICT.

COMMITTEE.

Henry S. Washburn, *Chairman.*
John Noble,
George H. Plummer,
Reuben Peterson, Jr., *Secretary.*
Benjamin F. Campbell,
George D. Ricker,
Willard S. Allen.

LYMAN SCHOOL.

Corner of Paris and Decatur streets.

Hosea H. Lincoln, *Master.*
George K. Daniell, Jr., *Sub-Master.*
Cordelia Lothrop, *Master's Assistant.*
Eliza F. Russell, *Head Assistant.*
Mary A. Turner, *Head Assistant.*

ASSISTANTS.

Amelia H. Pitman,
Mary P. E. Tewksbury,
Susan J. Adams,
Clara M. Hovey,
Lucy J. Lothrop,
Harriet N. Webster,
Emma P. Morey,
Louise A. Small.

Frances C. Close, *Sewing Teacher.*

PRIMARY SCHOOLS.

Paris street.

Susan H. M. Swan,
Angeline M. Cudworth,
Anna I. Duncan,
Harriet N. Tyler,
Abby M. Allen,
Elizabeth A. Turner.

Sub-Committee, Mr. Peterson.

Old Lyman School-house, Webster street.

Frances I. Dayley. *Sub-Committee*, Mr. Peterson.
Mary E. Morse. " Mr. Washburn.

Messrs. Washburn and Ricker, committee of all the schools in Lyman school-house.

MATHER SCHOOL DISTRICT.

COMMITTEE.

Benjamin Cushing, *Chairman.*
Fred P. Moseley,
Baylies Sanford, *Secretary.*
Joseph Willard,
Nathaniel B. Shurtleff.

MATHER SCHOOL.

Meeting-House Hill.

Daniel B. Hubbard, *Master.*
Sarah W. Symms, *Head Assistant.*

ASSISTANTS.

Lucy J. Dunnels,
Annie L. Jenks,
Sarah E. Austin,
Mary C. Jacobs,
S. Kate Shepard,
Ella L. Howe.

PRIMARY SCHOOLS.

Meeting-House Hill.

Ella L. Howe,
Mary P. Pronk.
M. Esther Drake,

MAYHEW SCHOOL DISTRICT.

COMMITTEE.

Samuel H. Wentworth, *Chairman.*	Frank B. Clock, *Secretary.*
Lucius Slade,	A. Kendall Tilden,
Wm. J. Porter,	John T. Beckley,
Ezra Palmer,	Thomas F. Mahan,

Edward B. Rankin.

MAYHEW SCHOOL.

Hawkins street.

Samuel Swan, *Master.*	Quincy E. Dickerman, *Sub-Master.*
George W. M. Hall, *Usher.*	Emily A. Moulton, *Master's Assistant.*
Adeline F. Cutter, *Head Assistant.*	

ASSISTANTS.

Luciette A. Wentworth,	Sarah W. I. Copeland,
Alicia O. Quimby,	Elizabeth L. West,
Alice A. Tufts,	Helen M. Coolidge,

Ruth E. Rowe.

PRIMARY SCHOOLS.

Grant place.

Emeline C. Farley.	*Sub-Committee,*	Mr. Beckley.
Ann M. F. Sprague.	"	Mr. Slade.
——— ———	"	Mr. Clock.
Affie T. Weir.	"	Mr. Mahan.
Elizabeth S. Parker.	"	Mr. Tilden.

Cooper street.

Harriet A. Farrow.	*Sub-Committee,*	Mr. Rankin.
Harriet S. Lothrop.	"	Mr. Porter.

MINOT SCHOOL DISTRICT.

COMMITTEE.

John W. Porter, *Chairman.*	William T. Adams, *Secretary.*
John H. McKendry,	Willard S. Allen.

J. Coffin Jones Brown.

MINOT SCHOOL.

Walnut street, Dorchester.

Joseph T. Ward, Jr., *Master.*

Isabel F. P. Emery, *Head Assistant.*

ASSISTANTS.

Annie E. Fisher,

Anne E. Collins.

PRIMARY SCHOOLS.

Walnut street, Neponset.

Jennie M. Seaverns,
Angelina A. Brigham.
Frances E. Hildreth,

Adams street.

Mary J. Pope.

NORCROSS SCHOOL DISTRICT.

Christopher A. Connor, *Chairman.*
John S. H. Fogg,
Arthur H. Wilson,
John E. Fitzgerald,
Warren P. Adams,
Richard J. Fennelly, *Secretary.*
Hugh J. Toland,
George A. Thayer,
Francis H. Underwood,
P. J. Whelton.

NORCROSS SCHOOL.

Corner of D and Fifth streets.

Josiah A. Stearns, *Master.*
Fiducia S. Wells, *Head Assistant.*
Amanda Marble, *Head Assistant.*
Mary J. Fennelly, *Master's Assistant.*

ASSISTANTS.

Sarah B. Abbott,
Mary Kyle,
Juliette Wyman,
Miranda A. Bolcom,
Juliette Smith,
Mary G. Lanning.
Sarah A. Gallagher,
Mary A. Neill,
Anne M. Prescott,
Harriet E. Johnston,
Emma L. Eaton,
Sarah J. Bliss, *Teacher of Sewing.*

PRIMARY SCHOOLS.

Parkman School, Silver street, near Dorchester Avenue.

Amelia McKenzie.	*Sub-Committee,*	Mr. Fitzgerald.
Harriet L. Rayne.	"	Mr. Toland.
Mary G. A. Toland.	"	Mr. Fennelly.
Isabel M. Kelren.	"	Mr. Thayer.
Mary F. Peeler.	"	Mr. Wilson.

Drake School, corner of C and Third streets.

Laura A. Read.	*Sub-Committee,*	Mr. Whelton.
Mary K. Davis,	"	Mr. Underwood.
Abby C. Nickerson.	"	Mr. Fogg.
Fanny W. Hussey.	"	Mr. Whelton.
Lucinda Smith.	"	Mr. Underwood.
Sarah V. Cunningham.	"	Mr. Fennelly.

Vestry of D street Church.

Ellen J. Cashman.	*Sub-Committee,*	Mr. Fitzgerald.
Mary R. Roberts.	"	Mr. Toland.

PHILLIPS SCHOOL DISTRICT.

COMMITTEE.

William O. Johnson, *Chairman.*
J. Baxter Upham,
S. K. Lothrop,
John F. Jarvis,
Hall Curtis,
James Reed, *Secretary.*
Nathaniel B. Shurtleff,
A. Kendall Tilden,
John E. Quinn,
John T. Beckley,
Joseph Willard.

PHILLIPS SCHOOL.

Phillips street.

James Hovey, *Master.*
George Perkins, *Usher.*
Laura M. Porter, *Head Assistant.*
Elias H. Marston, *Sub-Master.*
Carrie T. Haven, *Master's Assistant.*

ASSISTANTS.

Elvira M. Harrington,
Hannah M. Sutton,
Victoria M. Goss,
Eliza A. Corthell,
Martha A. Knowles,
Sarah E. Frye,
Clara J. Reynolds,
Martha F. Whitman.

PRIMARY SCHOOLS.

Phillips street.

Elizabeth W. Nickerson. *Sub-Committee*, Mr. Johnson.
Sarah A. M. Turner. " Mr. Curtis.
Mary E. Franklin. " Mr. Quinn.

Anderson street.

Barbara C. Farrington, *Sub-Committee*, Mr. Beckley.
Josephine O. Hedrick. *Sub-Committee*, Mr. Reed.

Joy street.

Elizabeth N. Smith. *Sub-Committee*, Mr. Willard.

Phillips School-house.

Ella F. Wright. *Sub-Committee*, Mr. Tilden.

PRESCOTT SCHOOL DISTRICT.

COMMITTEE.

John Noble, *Chairman.*
Henry S. Washburn,
Benjamin F. Campbell.
John W. Fraser, *Secretary.*
Willard S. Allen,
Reuben Peterson, Jr.,
George H. Plummer.

PRESCOTT SCHOOL.

Prescott street, East Boston.

James F. Blackinton, *Master.*
Elizabeth R. Drowne, *Master's Assistant.*
Louise S. Hotchkiss, *Head Assistant.*
L. Henry Dutton, *Sub-Master.*
Bernice A. De Merritt, *Head Assistant.*
Frances H. Turner, *Head Assistant.*

ASSISTANTS.

Mary A. Ford,	Harriet N. Weed,
Ellenette Pillsbury,	Sarah J. Litchfield,
Mary D. Day,	Annie G. De Silva,
Mary M. Foster.	Annie J. Noble, *Sewing Teacher.*

PRIMARY SCHOOLS.

Prescott School-house.

Hannah L. Manson,	Almaretta J. Critchett,
Emma C. Reed,	Margaret A. Bartlett.

Sub-Committee, Messrs. Noble and Fraser.

Rice Building, Saratoga street.

Caroline Ditson,	Florence H. Drew,
Abby M. Nye.	

Sub-Committee, Messrs. Peterson and Noble.

Bennington-street Chapel.

Mary E. Plummer,	Harriet T. Parker.

Sub-Committee, Mr. Noble.

Bennington street.

Elizabeth W. Hazell. *Sub-Committee*, Mr. Noble.

QUINCY SCHOOL DISTRICT.

COMMITTEE.

John E. Fitzgerald, *Chairman.*	Edward B. Rankin, *Secretary.*
William Woods,	Solon Thornton,
Henry P. Shattuck,	Edward C. Leonard,
John P. Reynolds,	David W. Foster,
John P. Ordway,	Henry J. Colman,
John M. Maguire,	George L. Chaney.
John J. Murphy,	

QUINCY SCHOOL.

Tyler street.

E. Frank Wood, *Master.*	George W. Neal, *Sub-Master.*
J. Martin Dill, *Usher.*	Annie M. Lund, *Master's Head Assistant.*
Olive M. Page, *Head Assistant.*	

ASSISTANTS.

Emily J. Tucker,
Nellie J. Frost,
Charlotte L. Wheelwright,
Josephine M. Hanna,
Ellen G. O'Leary,
Emily B. Peck,
Margaret F. Tappan.

PRIMARY SCHOOLS.

East street.

Harriette A. Bettis.	*Sub-Committee,* Mr. Shattuck.
Emily E. Maynard.	" Mr. Foster.
Priscilla Johnson.	" Mr. Reynolds.
Sarah E. Lewis.	" Mr. Woods.
Julia A. O'Hara.	" Mr. Ordway.
Lavonne E. Wabridge.	" Mr. Murphy.
Ellen E. Leach.	" Mr. Maguire.
Susan Frizzell.	" Mr. Rankin.
Louisa Bowker.	" Messrs. Colman and Leonard.
—— ——	*Sub-Committee,* Messrs. Thornton and Chaney.

RICE SCHOOL DISTRICT.

COMMITTEE.

Charles L. Flint, *Chairman.*
William B. Merrill,
J. Coffin Jones Brown,
Charles Hutchins,
Lyman Mason,
Charles J. Prescott, *Secretary.*
William Read,
George E. Filkins,
William H. Baldwin,
Jonathan A. Lane,
William T. Brigham.

RICE SCHOOL.

Corner of Dartmouth and Appleton streets.

Lucius A. Wheelock, *Master.*
Charles F. Kimball, *Usher.*
E. Maria Symonds, *Head Assistant.*
Edward Southworth, *Sub-Master.*
Martha E. Pritchard, *Master's Assistant.*

ASSISTANTS.

Elsie J. Parker,
Clara M. Symonds,
Eliza Cox,
Martha J. Porter,
Cynthia M. Beckler,
Florence Marshall,
Ella T. Gould,
Dora Brown,
Vacancy,
——— ———.

PRIMARY SCHOOLS.

Shawmut avenue.

Josephine G. Whipple.	*Sub-Committee,*	Mr. Merrill.
Georgiana A. Ballard.	"	Mr. Filkins.
Frances M. Sylvester.	"	Mr. Brown.
C. Josephine Bates.	"	Mr. Merrill.
Jane E. Haskell.	"	Mr. Baldwin.
Martha L. Beckler.	"	Mr. Filkins.

Appleton street.

Ella F. Wyman.	*Sub-Committee,*	Mr. Hutchins.
Ella B. Cheney.	"	Mr. Read.
Grace Hooper.	"	Mr. Lane.
Sarah E. Bowers.	"	Mr. Baldwin.
Emma F. Wyman.	"	Mr. Mason.
——— ———	"	Mr. Prescott.

SHERWIN SCHOOL DISTRICT.

COMMITTEE.

Ira Allen, *Chairman.*
John O. Means,
Stephen G. Deblois,
Joseph A. Tucker,
Moody Merrill,
P. O'Meara Edson, *Secretary.*
Geo. H. Lloyd,
Albert E. Dunning,
John D. Carty,
Joseph O'Kane.

SHERWIN SCHOOL.

Madison square.

Silas C. Stone, *Master.*
Julia F. Long, *Master's Assistant.*
Martha A. Smith, *Head Assistant.*
Chas. W. Hill, *Sub-Master.*
S. Maria Wheeler, *Head Assistant.*
Lucy L. Burgess, *Head Assistant.*

ASSISTANTS.

Elizabeth B. Walton,
Anna B. Carter,
Harriet A. Lewis,
Fanny McDonald,
E. Elizabeth Boies,
Fanny L. Stockman,
Louisa Ayer.
Sarah R. Bonney,
Josephine D. Snow,
Marion Henshaw,
Caroline K. Nickerson.
Isadora Bonney,
Alice T. Kelley,
Maria L. Young, *Sewing Teacher.*

PRIMARY SCHOOLS.

Weston street.

Anna G. Fillebrown, Mary E. Gardner.
Sub-Committee, Mr. Carty.
Annie E. McDonald, Martha E. Page.
Sub-Committee, Mr. Means.

Franklin place.

Annie E. Wallcut, Sarah J. Davis.
Sub-Committee, Mr. Allen.
Sarah L. Tewksbury, Clara C. Walker.
Sub-Committee, Mr. Tucker.

Avon place.

Abby E. Ford, Elizabeth F. Todd.
Sub-Committee, Mr. O'Kane.

Day's Chapel.

Emily L. Marston. *Sub-Committee*, Mr. Lloyd.

Mill Dam.

Annie H. Berry. *Sub-Committee*, Mr. Dunning.

SHURTLEFF SCHOOL DISTRICT.

COMMITTEE.

John S. H. Fogg, *Chairman.*
Francis H. Underwood,
Warren P. Adams,
Baylies Sanford,
Joseph H. Allen, *Secretary.*
George A. Thayer,
Christopher A. Connor,
Nathaniel B. Shurtleff,
P. J. Whelton.

SHURTLEFF SCHOOL.

Dorchester street, South Boston.

Henry C. Hardon, *Master.*
Ellen E. Morse, *Head Assistant.*
Lavinia B. Pendleton, *Head Assistant.*
Anna M. Penniman, *Master's Assistant.*
Emeline L. Tolman, *Head Assistant.*

ASSISTANTS.

Martha E. Morse,
Catharine A. Dwyer,
Sarah L. Garrett,
Harriet S. Howes,
Julia M. Pease,
Abby S. Hammond,
Margaret T. Pease,
Roxanna N. Blanchard,
Eliza F. Blacker,
Ella C. Handy.

Eliza M. Cleary, *Sewing Teacher.*

PRIMARY SCHOOLS.

Clinch Building, F street, corner of Seventh.

Sarah B. Packard	*Sub-Committee,*	Mr. Shurtleff.
Marion W. Rundlett	"	Mr. Thayer.
Ella R. Johnson.	"	Mr. Connor.
Mary E. Morse.	"	Mr. Sanford.
Sophia C. Dudley	"	Mr. Fogg.
Julia F. Baker.	"	Mr. Adams.

Washington Village.

Annie C. Carleton	*Sub-Committee,*	Mr. Thayer.
Annie A. Bailey.	"	Mr. Allen.
M. L. Moody.	"	Mr. Sanford.
Edith A. Pope.	"	Mr. Underwood.
Susan Mulloy.	"	Mr. Allen.
Rosabel Aldrich.	"	Mr. Adams.
Mary A. Jenkins	"	Mr. Whelton.

Decker Hall.

Grace E. Gragg.	*Sub-Committee,*	Mr. Fogg.

STOUGHTON SCHOOL DISTRICT.

COMMITTEE.

John W. Porter, *Chairman.* Willard S. Allen, *Secretary.*
John H. McKendry, John C. J. Brown,
William T. Adams.

STOUGHTON SCHOOL.

River street, Lower Mills.

Edward M. Lancaster, *Master.* Elizabeth H. Page, *Head Assistant.*

ASSISTANTS.

Isabelle A. Worsley, Emma A. Melville,
Catharine E. Cook.

PRIMARY SCHOOLS.

River street.

Elizabeth J. Stetson, R. Ellerine Robie,
Hannah E. Pratt.

TILESTON SCHOOL DISTRICT.

COMMITTEE.

John H. McKendry, *Chairman.* John W. Porter, *Secretary.*
Willard S. Allen, John C. J. Brown,
Wm. T. Adams.

TILESTON SCHOOL.

Norfolk street, Mattapan.

Henry B. Miner, *Master.*

ASSISTANTS.

Martha A. Baker, —— ——.

PRIMARY SCHOOLS.

Norfolk street.

Elizabeth S. Fisher. *Sub-Committee*, Mr. McKendry.

WASHINGTON AND DUDLEY SCHOOL DISTRICT.

COMMITTEE.

P. O'Mera Edson, *Chairman.*
Ira Allen,
John O. Means,
James Waldock,
George H. Monroe,
Geo. W. Adams, *Secretary.*
Chas. K. Dillaway,
Joel Seaverns,
Albert E. Dunning,
George F. Emery.

WASHINGTON SCHOOL.

2000 Washington street.

Leverett M. Chase, *Master.*
Charles E. Swett, *Sub-Master.*
Harriet E. Davenport, *Head Assistant.*

ASSISTANTS.

Louisa W. Emmons,
Myra W. Pond,
Marietta Rice.
Helen O. Wyman.

DUDLEY SCHOOL.

Bartlett street.

Sarah J. Baker, *Principal.*
Jane S. Leavitt, *Head Assistant.*
Eldora A. Pickering, *Principal's Assistant.*

ASSISTANTS.

Mary C. Whippey,
Mary L. Gore,
Eliza Brown,
Mary S. Sprague.
Mary C. Pratt, *Sewing Teacher.*

PRIMARY SCHOOLS.

Vernon street.

Anna M. Stone.	*Sub-Committee,*	Mr. Seaverns.
S. Louisa Durant.	"	Mr. Means.
H. Amelia Philbrick.	"	Mr. Dillaway.
Anna T. Bicknell.	"	Mr. Monroe.

Putnam street.

Henrietta M. Wood.	*Sub-Committee,*	Mr. Dunning.
Mary A. Morse.	“	Mr. Adams.
Mary V. Woodman.	“	Mr. Waldock.
Celia A. Scribner.	“	Mr. Emery.

WELLS SCHOOL DISTRICT.

COMMITTEE.

John F. Jarvis, *Chairman.*
William O. Johnson,
Frank B. Clock,
Nath'l B. Shurtleff,
Lucius Slade,
James A. McDonough, *Secretary.*
Samuel H. Wentworth,
Ezra Palmer,
A. Kendall Tilden,
John E. Quinn,
James Reed.

WELLS SCHOOL.

Corner of Blossom and McLean streets.

Rodney G. Chase, *Master.*
Mary S. Carter, *Head Assistant.*
Delia A. Varney, *Head Assistant.*
Abby J. Boutwell, *Master's Assistant.*
Mary W. Perry, *Head Assistant.*

ASSISTANTS.

Mary A. C. Williams,
Mary M. Perry,
Elizabeth P. Winning,
Mary T. Locke,
Mary G. Shaw,
Matilda A. Gerry.
Mrs. Frances E. Stevens, *Sewing Teacher.*

PRIMARY SCHOOLS.

Emerson School, Poplar street.

Maria W. Turner.	*Sub-Committee,*	Mr. Wentworth.
Emma Dexter.	“	Mr. Reed.
Anna A. James.	“	Mr. Johnson.
Eliza A. Freeman.	“	Mr. Clock.
Sarah C. Chevaillier.	“	Mr. Quinn.
Lucy M. A. Redding.	“	Mr. McDonough.

Dean School, Wall street.

Georgiana D. Bastow,	*Sub-Committee*, Mr. Tilden.
Mary L. Bailey.	“ Mr. Quinn.
Lavinia M. Allen.	“ Mr. Slade.
Lois M. Rea.	“ Mr. Tilden.
Adelaide A. Rea.	“ Mr. Slade.
Isabella Bennett.	“ Mr. Clock.

WINTHROP SCHOOL DISTRICT.

COMMITTEE.

Henry P. Shattuck, *Chairman.*
J. Coffin Jones Brown,
John P. Reynolds,
John P. Ordway,
Francis D. Stedman,
John M. Maguire,
George F. Bigelow,
William Woods, *Secretary.*
Samuel B. Cruft,
Ezra Palmer,
David W. Foster,
George L. Chaney,
George E. Filkins,
John E. Fitzgerald.

WINTHROP SCHOOL.

Tremont street, near Eliot street.

Robert Swan, *Master.*
Mary Gertrude Ladd, *Head Assistant.*
Maria L. Barney, *Head Assistant.*
Susan A. W. Loring, *Master's Assist.*
Emma K. Valentine, *Head Assistant.*
Almira Seymour, *Head Assistant.*

ASSISTANTS.

Ella L. Bird,
Mary F. Light,
Mary E. Davis,
Mary J. Danforth,
Lizzie H. Bird,
Mary C. Jones,
Elizabeth S. Emmons,
Edith Adams,
Harriet R. G. DeRibas,
Emma V. Flagg,
Carrie F. Welch,
Mary E. Barstow.

Isabella Cummings, *Sewing Teacher.*

PRIMARY SCHOOLS.

Tyler street.

Rachel R. Thayer.	*Sub-Committee*, Mr. Woods.
Mary B. Browne.	“ Mr. Ordway.
Ella M. Seaverns.	“ Mr. Cruft.
Mary A. B. Gore.	“ Mr. Foster.
Frances Torrey.	“ Mr. Bigelow.

Hudson street.

Caroline S. Crozier. *Sub-Committee*, Mr. Palmer.
Henrietta Madigan. " Mr. Maguire.
Emma I. Baker. " Mr. Filkins.
Julia A. McIntyre. " Mr. Fitzgerald.

SCHOOL FOR LICENSED MINORS.

North Margin street.

Sarah A. Brackett.

East street place.

Melissa P. Taylor.

SCHOOL FOR DEAF MUTES.

11 *Pemberton square.*

Sarah Fuller, *Principal.*

ASSISTANTS.

Annie E. Bond, Ellen L. Barton.

KINDERGARTEN SCHOOL.

Corner of Allston and Somerset streets.

Harriet J. Viaux, *Principal.*

TRUANT OFFICERS.

The following is the list of the truant officers at present employed, with their respective districts, and with the school sections embraced in each truant district: —

OFFICERS.	DISTRICTS.	SCHOOL SECTIONS.
Chase Cole.	North.	Eliot, Hancock.
C. E. Turner.	East Boston.	Adams, Chapman, Lyman, Prescott.
Geo. M. Felch.	Central.	Bowdoin, Mayhew, Phillips, Wells.
Jacob T. Beers.	Southern.	Brimmer, Bowditch, Quincy, Winthrop.
Phineas Bates.	South Boston.	Bigelow, Lawrence, Lincoln, Norcross, and Shurtleff.
A. M. Leavitt.	South.	Dwight, Everett, Franklin, Rice, and Boylston.
Samuel McIntosh.	Roxbury, East District.	Lewis, Dearborn, and Washington.
E. F. Mecuen.	Roxbury, West District.	Comins, Dudley, and Sherwin.
Jeremiah M. Swett.	Dorchester, Northern District.	Lewis, Everett, Mather, Monroe, and Atherton.
James P. Leeds.	Dorchester, Southern District.	High, Harris, Gibson, Tileston, Stoughton, and Minot.

ORDER BOXES.

North District.

Hancock School-house.
Police Station No. 1, Hanover street.

East Boston.

Adams, Chapman, and Prescott School-houses.
Police Station, No. 7, Meridian street.

Central District.

Mayhew School-house.
Police Station No. 3, Joy street.

Southern District.

Brimmer and Quincy School-houses.
Police Station No. 4, La Grange street.

South Boston.

Bigelow and Lincoln School-houses.
Police Station No. 6, Broadway, near C street.

South District.

Dwight and Rice School-houses.
Police Station No. 5, East Dedham street.

Roxbury, East District.

Dearborn, Lewis, and Washington School-houses.

Roxbury, West District.

Sherwin and Comins School-houses.

Dorchester, Northern District.

Lewis, Everett, Mather and Monroe School-houses.

Dorchester, Southern District.

Harris, Gibson, Stoughton and Minot School-houses.

CONTENTS.

CONTENTS.

PAGE

ANNUAL REPORT OF THE SCHOOL COMMITTEE.

Introduction 5
Delay in Appointing the Committee 5
Superintendent's Reports 6
General Statistics 6
New Normal School 7
Reorganization of Dorchester District 8
New Building for the Latin and English High Schools 9
Defects in our School System 10
Examination of Schools 10
Assistant Superintendents 11
Examination of Teachers 12
Co-operation between the High and Grammar Schools 14
Industrial Education 15
Accompanying Documents 16
Concluding Remarks 16

REPORTS OF COMMITTEES ON THE HIGH SCHOOLS.

Latin School 21
  Catalogue of the Latin School 29
English High School 33
  Catalogue of English High School 37
Girls' High and Normal School 45
  Catalogue of Girls' High School 66
Catalogue of Roxbury High School 75
Dorchester High School 79
  Catalogue of Dorchester High School 94
Catalogue of Normal School 97

THE SUPERINTENDENT'S REPORTS.

Twenty-fourth Semi-Annual Report 101
  School Attendance 101
  Teachers 130

PAGE
Admission to the High Schools 136
The First Steps in Teaching Numbers 145
Miss A. E. Reed's Paper 145
Miss E. A. Wiggin's Paper 148
Dr. Leigh's Method 156
Expenditures for Schools 160
Twenty-fifth Semi-Annual Report 163
Summary of Statistics 163
Primary Schools 169
Grammar Schools 176
High Schools 182
Latin School 186
English High School 187
Girls' High and Normal School 192
Roxbury High School 196
Dorchester High School 198
Normal School 199
Special Schools 205
Evening Drawing Schools 206
Evening High School 207
Elementary Evening Schools 210
Schools for Licensed Minors 212
School for Deaf Mutes 213
Kindergarten School 214
Sewing 216
Drawing 222
Attendance 227
Hygiene 234

STATISTICS ACCOMPANYING SUPERINTENDENT'S REPORTS 243

REPORT OF STANDING COMMITTEE ON MUSIC.

Revised Course of Musical Instruction 276
Report of Supervisor of Music 293
Annual Musical Exhibition 301

REPORT OF COMMITTEE ON DRAWING.

Supervisor of Drawing for 1872 307
Primary Schools 309
Grammar Schools 309
High Schools 310
Teachers' Normal School 312
Result of Teachers' Examination 314
Free Evening Schools 321

PAGE
REPORT OF THE COMMITTEE ON INDUSTRIAL SCHOOLS 341

ADDRESS AND SCHOOL FESTIVAL.

Mayor Gaston's Address in Response to a Vote of Thanks by the Board 351
Annual School Festival 353

FRANKLIN MEDAL SCHOLARS 361
LAWRENCE PRIZES 362
DIPLOMAS OF GRADUATION 364
ROSTER OF REGIMENT 380
LIST OF SCHOOL-HOUSES 384
ORGANIZATION OF SCHOOL COMMITTEE AND SCHOOLS 389

City Document.—No. 139.

CITY OF BOSTON.

PROCEEDINGS OF THE COMMON COUNCIL

AT THE

CLOSE OF ITS LAST MEETING,

WITH THE

Address of President Shepard.

1873.

CITY OF BOSTON.

IN COMMON COUNCIL, Jan. 1, 1874.

On motion of Mr. Dean, seconded by Mr. Denny (Mr. Pickering presiding), the subjoined resolution of thanks to the President of this Board was passed unanimously, the vote having been taken, on motion of Mr. Brackett, by the members rising in their places: —

" *Resolved*, That the thanks of this Council be tendered to our President, Edward O. Shepard, for the uniform courtesy, impartiality, and ability which have characterized the administration of the duties of his important office, during the year now drawing to a close."

The President resumed the chair, and to this resolution made a reply.

Mr. Shaw expressed a wish that the reply of the President might be printed, and, on motion of Mr. Prescott: —

" *Ordered*, That the President be requested to furnish a copy of his Address, that the same may be printed and bound with the City Documents."

W. P. GREGG,
Clerk of the Common Council.

ADDRESS OF PRESIDENT SHEPARD.

Gentlemen of the Common Council: —

I thank you more heartily than I can express by any form of words, for your resolution, and for the very generous sentiments uttered by those who have spoken to it. I accept it all, with as much pride and pleasure as I should if like closing ceremonies had never before been enacted. Custom cannot rob them of their meaning, nor formality shadow their heartiness. They are in exact keeping with the unvarying kindness and courtesy which you have extended to me during the entire year. My thanks, therefore, must cover not only what you have been pleased to say of me to-day, but also your whole conduct towards me while I have been your presiding officer.

A large share of whatever success may have attended my efforts to discharge the delicate and responsible duties of my office with exact fairness to each of you, and fidelity to the trust it devolved upon me, is due to your ready support of me under all circumstances, to the respect and courtesy with which all my rulings and suggestions have been accepted, to your careful observance of the rules which you adopted for your own government, to your dignity and decorum in debate, and your commendable devotion to the public business committed to your hands.

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The recommendation for the appointment of a commission to revise the laws and charter of the city, communicated in the inaugural message of the Mayor, received your early attention. The great importance of the subject deserved and received the fullest discussion both in the Committee on Ordinances, to which it was sent, and in this body, thereby

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I will venture to suggest without meaning to anticipate any of the reforms that may be effected by the revision of the laws and charter, that harmony between the two co-ordinate branches of the City Council will be greatly promoted, and good government will be better secured, when each body shall have an equal voice in determining in what manner the public money shall be expended in all departments that are under the direction of the City Council. The subjects of paving, police, sewers, bridges, lamps, and others, all of great magnitude, with which this body has nothing to do after it has concurred in the passage of the annual bill of appropriations, would receive by the change suggested all the advantages that are supposed to be derived from a separate consideration in two independent legislative bodies, each of which is a check upon the action of the other. The wisdom of this system of concurrent legislation has been shown in several instances during the past year, which I need not mention, where unwise measures that had passed through one branch without due consideration were defeated in the other. The fact that some good measures passed with great unanimity by this body have been lost in the other, does not argue against the excellence of the system, but shifts the burden of responsibility.

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soup for distribution at the various police stations, cannot be laid at the door of this body. Your persistent and almost unanimous action in favor of contributing a trifle out of the public fund, even in face of its questioned legality, toward relieving the increased extreme destitution that it is evident must prevail among the poorest classes during the winter now chilling the naked and homeless, although fruitless in the desired result, will not fail to receive the plaudits of the great majority of your constituents, and without doubt has already been written by the pen of the recording angel among your noblest municipal acts. The $5,000 which the Board of Aldermen appropriated for the balloon ascension upon the common, on the last Fourth of July, but which was saved to the city by the veto of this body, would more than cover the entire expense of this charity.

It is a matter of regret that the city will suffer the loss of some of the most valuable members of the present Council, solely on account of the unfortunate rule that prevails in some wards, limiting the term of office to two years. This rule has its foundation in the false idea of rotation in office for the sake of accommodating other aspirants. It would be more to the advantage of the wards, as well as the city, to return truly valuable members for a third, or even a fourth year, if they are willing to give so much time to the city's service, and thereby strengthen the government with the superior knowledge and aptness which are acquired by a longer experience in the conduct of its affairs.

I need not remind you, yet it is proper for me to make mention here, of the sad fact that death has made one vacant seat in our chamber, and the clerk, ever since the first of September, has ceased to call the name of the lamented Thomas H. Doherty. He set out with us with as certain prospect of reaching this closing hour as lay before any of our number. He made no attempt to impress himself upon his fellow-members by any brilliant deeds or words, but none

could fail to observe enough of true worth in him ; a modesty and kindliness of behavior at all times ; an honest purpose to discharge his duties here faithfully, which bring to us only agreeable and respectful memories of his life with us, and call from us all sincere regrets over his too early grave.

Again thanking you for the harmony that has prevailed to a remarkable degree in the conduct of our official proceedings, and for the generous and unexceptional good-will and courteous regard of which you have made me a recipient from the beginning to this day, I invite you to join with me in casting behind us into the grave of the Old Year every word and action in our intercourse together that may not be pleasantly remembered, especially every error of judgment that I may have fallen into in the performance of my office, for I am sure that I have never knowingly or intentionally erred against any of you ; and I invite you to bring into the New Year and preserve in memory in the coming years all the pleasant scenes and experiences that we have so agreeably shared together. That our closing session and parting words do not fall into the shadows of one of the last days of the dying year, but instead are set about with the radiance and gladness of New Year's Day, may be regarded as a happy omen of the living power of the friendships that have here been formed, and of the light of public favor which will henceforth always shine upon the records and doings of the members of the Common Council of 1873.

City Document.—No. 139.

CITY OF BOSTON.

PROCEEDINGS OF THE COMMON COUNCIL

AT THE

CLOSE OF ITS LAST MEETING,

WITH THE

Address of President Shepard.

1873.

CITY OF BOSTON.

In Common Council, Jan. 1, 1874.

On motion of Mr. Dean, seconded by Mr. Denny (Mr. Pickering presiding), the subjoined resolution of thanks to the President of this Board was passed unanimously, the vote having been taken, on motion of Mr. Brackett, by the members rising in their places: —

" *Resolved*, That the thanks of this Council be tendered to our President, Edward O. Shepard, for the uniform courtesy, impartiality, and ability which have characterized the administration of the duties of his important office, during the year now drawing to a close."

The President resumed the chair, and to this resolution made a reply.

Mr. Shaw expressed a wish that the reply of the President might be printed, and, on motion of Mr. Prescott: —

" *Ordered*, That the President be requested to furnish a copy of his Address, that the same may be printed and bound with the City Documents."

W. P. GREGG,
Clerk of the Common Council.

ADDRESS OF PRESIDENT SHEPARD.

GENTLEMEN OF THE COMMON COUNCIL: —

I thank you more heartily than I can express by any form of words, for your resolution, and for the very generous sentiments uttered by those who have spoken to it. I accept it all, with as much pride and pleasure as I should if like closing ceremonies had never before been enacted. Custom cannot rob them of their meaning, nor formality shadow their heartiness. They are in exact keeping with the unvarying kindness and courtesy which you have extended to me during the entire year. My thanks, therefore, must cover not only what you have been pleased to say of me to-day, but also your whole conduct towards me while I have been your presiding officer.

A large share of whatever success may have attended my efforts to discharge the delicate and responsible duties of my office with exact fairness to each of you, and fidelity to the trust it devolved upon me, is due to your ready support of me under all circumstances, to the respect and courtesy with which all my rulings and suggestions have been accepted, to your careful observance of the rules which you adopted for your own government, to your dignity and decorum in debate, and your commendable devotion to the public business committed to your hands.

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efficiency has contributed, in no small degree, to regulate and facilitate our proceedings.

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City Document. — *No.* 139.

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PROCEEDINGS OF THE COMMON COUNCIL

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WITH THE

Address of President Shepard.

1873.

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Clerk of the Common Council.

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Again thanking you for the harmony that has prevailed to a remarkable degree in the conduct of our official proceedings, and for the generous and unexceptional good-will and courteous regard of which you have made me a recipient from the beginning to this day, I invite you to join with me in casting behind us into the grave of the Old Year every word and action in our intercourse together that may not be pleasantly remembered, especially every error of judgment that I may have fallen into in the performance of my office, for I am sure that I have never knowingly or intentionally erred against any of you; and I invite you to bring into the New Year and preserve in memory in the coming years all the pleasant scenes and experiences that we have so agreeably shared together. That our closing session and parting words do not fall into the shadows of one of the last days of the dying year, but instead are set about with the radiance and gladness of New Year's Day, may be regarded as a happy omen of the living power of the friendships that have here been formed, and of the light of public favor which will henceforth always shine upon the records and doings of the members of the Common Council of 1873.

City Document. — *No.* 139.

CITY OF BOSTON.

PROCEEDINGS OF THE COMMON COUNCIL

AT THE

CLOSE OF ITS LAST MEETING,

WITH THE

Address of President Shepard.

1873.

CITY OF BOSTON.

In Common Council, Jan. 1, 1874.

On motion of Mr. Dean, seconded by Mr. Denny (Mr. Pickering presiding), the subjoined resolution of thanks to the President of this Board was passed unanimously, the vote having been taken, on motion of Mr. Brackett, by the members rising in their places: —

" *Resolved*, That the thanks of this Council be tendered to our President, Edward O. Shepard, for the uniform courtesy, impartiality, and ability which have characterized the administration of the duties of his important office, during the year now drawing to a close."

The President resumed the chair, and to this resolution made a reply.

Mr. Shaw expressed a wish that the reply of the President might be printed, and, on motion of Mr. Prescott: —

" *Ordered*, That the President be requested to furnish a copy of his Address, that the same may be printed and bound with the City Documents."

W. P. GREGG,
Clerk of the Common Council.

ADDRESS OF PRESIDENT SHEPARD.

Gentlemen of the Common Council: —

I thank you more heartily than I can express by any form of words, for your resolution, and for the very generous sentiments uttered by those who have spoken to it. I accept it all, with as much pride and pleasure as I should if like closing ceremonies had never before been enacted. Custom cannot rob them of their meaning, nor formality shadow their heartiness. They are in exact keeping with the unvarying kindness and courtesy which you have extended to me during the entire year. My thanks, therefore, must cover not only what you have been pleased to say of me to-day, but also your whole conduct towards me while I have been your presiding officer.

A large share of whatever success may have attended my efforts to discharge the delicate and responsible duties of my office with exact fairness to each of you, and fidelity to the trust it devolved upon me, is due to your ready support of me under all circumstances, to the respect and courtesy with which all my rulings and suggestions have been accepted, to your careful observance of the rules which you adopted for your own government, to your dignity and decorum in debate, and your commendable devotion to the public business committed to your hands.

I take pleasure in availing myself of this opportunity to acknowledge my own as well as your indebtedness to Mr. Gregg, the experienced clerk of the Common Council, whose civility graces the discharge of all his duties, and whose

efficiency has contributed, in no small degree, to regulate and facilitate our proceedings.

Now that the labors of your municipal year are finished, it is fitting that I should pass in review before you some of your more important works. If time permitted, I would present the whole array of them, well knowing that, with hardly an exception, all could be looked upon with proud satisfaction.

The great work of the improvements of the streets and grade in the portion of the city laid waste by the November fire, called the "burnt district," was one of the most important as well as one of the earliest subjects you were called upon to meet and decide. I will not occupy the time even by enumerating the numerous resolves and orders that you were called to pass upon. It is sufficient to say that they embraced the widening and extension of nearly all the streets in that territory. A large part of the work necessarily devolved upon the Committee on Streets, rendering their labors extraordinary. How well this work has been done, and how few mistakes have been made in it, can be seen from an inspection of the territory itself, now largely rebuilt upon the new lines and grade. The Street Commissioners and this City Council may proudly abide the public judgment upon the wisdom displayed by them in the rearrangement of the "burnt district." The friends and opponents of the stoutly contested widening of Water and Congress streets for the accommodation of the new Post Office will doubtless watch the future development of that locality with peculiar interest, to learn whose judgment on the question was really the wiser one.

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I need not remind you, yet it is proper for me to make mention here, of the sad fact that death has made one vacant seat in our chamber, and the clerk, ever since the first of September, has ceased to call the name of the lamented Thomas H. Doherty. He set out with us with as certain prospect of reaching this closing hour as lay before any of our number. He made no attempt to impress himself upon his fellow-members by any brilliant deeds or words, but none

could fail to observe enough of true worth in him; a modesty and kindliness of behavior at all times; an honest purpose to discharge his duties here faithfully, which bring to us only agreeable and respectful memories of his life with us, and call from us all sincere regrets over his too early grave.

Again thanking you for the harmony that has prevailed to a remarkable degree in the conduct of our official proceedings, and for the generous and unexceptional good-will and courteous regard of which you have made me a recipient from the beginning to this day, I invite you to join with me in casting behind us into the grave of the Old Year every word and action in our intercourse together that may not be pleasantly remembered, especially every error of judgment that I may have fallen into in the performance of my office, for I am sure that I have never knowingly or intentionally erred against any of you; and I invite you to bring into the New Year and preserve in memory in the coming years all the pleasant scenes and experiences that we have so agreeably shared together. That our closing session and parting words do not fall into the shadows of one of the last days of the dying year, but instead are set about with the radiance and gladness of New Year's Day, may be regarded as a happy omen of the living power of the friendships that have here been formed, and of the light of public favor which will henceforth always shine upon the records and doings of the members of the Common Council of 1873.

City Document.—No. 140.

CITY OF BOSTON.

REPORT OF DIRECTORS

FOR

PUBLIC INSTITUTIONS

ON THE

SUBJECT OF THEIR RULES FOR RELIGIOUS INSTRUCTION TO INMATES.

In Common Council, Jan. 1, 1874.

Ordered to be printed and sent up.

E. O. SHEPARD, *President.*

In Board of Aldermen, Jan. 3, 1874.

Placed on file.

L. R. CUTTER, *Chairman.*

CITY OF BOSTON.

OFFICE OF THE BOARD OF DIRECTORS FOR PUBLIC INSTITUTIONS.

CITY HALL, BOSTON, December 30, 1873.

To the Honorable the City Council of Boston: —

GENTLEMEN, — The Board of Directors for Public Institutions, in compliance with the order of the City Council requesting the Board to furnish their reasons to the City Council, on or before the next meeting of the Common Council on the first of January next, for not permitting the inmates of those institutions to receive, under suitable regulations, religious instruction from teachers in whom they profess to have faith, respectfully report, that the subject of religious instruction has been at various times considered by the Board, but more especially since the twenty-first day of February last, when, upon the petition of the Bishop of Boston, and several Catholic clergymen and citizens, urging the appointment of a Catholic clergyman for the several institutions, the Board gave a hearing upon the subject to the petitioners, when the reasons why, in their opinion, such a clergyman should be appointed, were fully presented and carefully considered. Immediately after the hearing the following order was submitted: —

" *Ordered*, That from and after the 4th of March, 1873, this Board of Directors grant the privilege of a Catholic clergyman to all the inmates of that faith in the institutions under their charge and control; and that no inmate in any such institution professing the Catholic faith shall be compelled to assist at, or take part in, any other form of religious worship."

This order was discussed and laid on the table, in order that some members of the Board might have an opportunity to consider the subject in its full bearing upon the discipline and welfare of the institutions.

While the subject was upon the table, the Board, early in the month of June, in the course of its regular business, made the annual choice of the chaplains of the institutions, when the present incumbents, who had for several years occupied these positions, meriting and receiving the confidence of the Board, were re-elected by a unanimous vote; one member of the Board, a prominent member of the Catholic Church, who submitted the order before mentioned, voting for these gentlemen as "Chaplains for non-Catholics." Afterwards, in July, the order was taken from the table and again considered; when, upon motion of one of the strongest advocates of the measure, the subject was referred for consideration to the President of the Board and Director Donahoe, with instructions to report to the Board early in September. At the time assigned for the report, the President stated that the committee had been unable to agree upon a report, and for himself reported verbally, that he had consulted with the bishop of the diocese, and had a long interview with him, and that he had discovered no reason for changing his convictions formerly expressed, which were adverse to the appointment of a Catholic clergyman for the institutions. Director Donahoe at the same time also reported verbally in favor of the appointment of such a clergyman, and submitted an order looking to the immediate establishment of a Catholic service, which order was discussed and laid upon the table. Here the subject rested until the tenth inst., when, at a special meeting of the Board, called to consider a communication from the City Council requesting an opinion as to the propriety of changing the rules of the Board, the subject was again considered. Pending a vote upon the direct question contained in the order of Director Donahoe, the following vote was submitted as a substitute for the order: —

" *Voted*, That, in the opinion of this Board, the inmates of the institutions under the control of the city should be permitted, under such regulations as will not interfere with their proper discipline, to receive religious instructions from teachers in whom they profess to have faith, and that they should not be compelled to listen to religious instructions or take part in religious services which are not in accordance with the dictates of their own conscience."

This vote, so entirely different from the order then under consideration, and opening such a wide field for discussion and investigation, was, at that time, but briefly considered, and then laid upon the table.

The records of the Board have been thus briefly reviewed in order that the City Council may be assured that, thus far, no definite action has been taken upon this subject. Although the subject has for the past ten months been prominently in mind, whenever a definite vote upon it was imminent it has assumed a new phase, calling for more careful and extended inquiry.

To the first communication of the City Council in relation to the propriety of changing the rules of the institutions, the Directors, conscious that the power of providing for such a service as was contemplated by the petitioners was vested in the Board, replied that no such change was necessary. The second inquiry, in relation to the reasons for not permitting the inmates of the institutions to receive religious instructions from teachers in whom they profess have faith, can be answered by the statement that the Directors have, as yet, taken no definite and final action upon the prayer of the petitioners, but still have the subject under careful consideration.

Respectfully,

J. P. BRADLEE,
President.

City Document. — *No.* 141.

CITY OF BOSTON.

PROCEEDINGS

OF THE

BOARD OF ALDERMEN,

AT THEIR

LAST MEETING,

January 3, 1874.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Jan. 3. 1874.

AFTER the business of the Board had been accomplished (Alderman GIBSON in the Chair), the following resolve was submitted by Alderman QUINCY: —

Resolved, That the thanks of the Board of Aldermen be tendered to the Chairman, HON. LEONARD R. CUTTER, for the ability, courtesy, impartiality and industry with which he has discharged the duties and performed the labors of his office during the past year, and for the satisfactory and commendable manner in which he has served as the acting Mayor since the resignation of HIS HONOR MAYOR PIERCE.

Alderman QUINCY, in support of the resolution, said: —

I deem myself fortunate, sir, that the privilege of offering this resolve, testifying to our appreciation of the services of our Chairman falls to my lot, for the reason that while that gentleman and myself have so widely differed in our views of certain measures which have come under discussion, no one can more highly appreciate than I the conscientious zeal, industry and unshaken firmness with which he has supported his own convictions, and labored in the interest of the city during the past year. In behalf of those of us whose connection with the City Government is now to terminate, I doubt not that I utter the voice of all in assuring the Board of the sincere personal friendship and esteem with which we take leave of those who have been our fellow-laborers in this vineyard during the important municipal year which has just closed. Some of us would have willingly continued to contribute our services to the city which we love; others, to whom her interests are no less dear, would have found it impossible. But whatever may have been the varying opinions and utterances of approval or criticism elicited among our fellow-citizens by our official course, I hope that all will agree that we may at least reply to those to whom we owe the honor of having held these seats, in the simple words with which one of the bravest of American soldiers closed his earthly career, — "We have endeavored to do our duty."

Alderman Gaffield. — In seconding these resolutions, may I be permitted to say that in an experience of five years in our City Government, I can look back upon no one with more pleasant memories than that which is just drawing to its close. A year ago our city was sorely afflicted by the visitation of fire and pestilence. The people, rising in their majesty and power above all local and party ties, selected and elected the members of the present Board. The Board in the same liberal spirit made choice of its Chairman. In the same spirit the Chairman has presided, and the members have spoken and acted towards each other. We have had important questions before us throughout the year, and they have been earnestly, fully and heartily discussed. Each member has had his own opinion, and has defended it in a manly and independent way. Each has seemed to vie with his neighbor in honest endeavors to serve the public good. In all our debates there has been a marked courtesy and respect for the opinions of others, and no time has been wasted in disputes upon parliamentary tactics. The year will stand out as a red-letter year in the memory of every member of the Board, and equally so in the annals of the city, for the many important measures inaugurated and consummated for that city's welfare.

It would be unbecoming for us to speak of our own acts. If they have been wise and judicious, right and honest, they will in all coming time speak for themselves in the promotion of the best welfare of the community. The consciousness of having done modestly, honestly, and to the best of our ability, our humble part in the government of the city during a most important and trying year in its history, is the richest reward of any public servant, rising far above the petty triumphs of political victors, and making one oblivious of the petty annoyances of harsh criticism and unjust judgment. Such a consciousness can our Chairman enjoy, with the added satisfaction of the hearty approval of all his associates at this Board. I feel assured that I only voice our unanimous sentiment in saying, at this closing hour, that among the choicest memories of our lives will be the recollection of this very busy, but pleasant year, spent in public service, and especially grateful will be the remembrance of the uniform courtesy of our Chairman towards the members of the Board, and of their friendly relations with each other.

Alderman CLARK. — It gives me great pleasure to add my testimony to the faithful and impartial manner in which the Chairman has executed the duties of his office during the past year. His close attention to his duties, both as Chairman and as member of this Board, is well worthy the imitation of those who will come after him, and if all who are called to the administration of the affairs of the Government do so with an eye single to the city's welfare, as he has done, it will be well for the interest of the city. I believe that every member of the present City Government thinks that, as Chairman and member of this Board, our Chairman has exerted his influence solely in the manner which he believed to be for the best interests of the City of Boston. And, Mr. Chairman, I can say that the city is particularly fortunate in that it is not to lose his services during the year 1874. It is fortunate for the city and fortunate for the members of the Board.

Alderman POWER. — I cannot permit our proceedings to close without indorsing the sentiments which have been expressed by the gentlemen who have spoken in relation to the Chairman; and, Mr. Chairman, I would say a word or two in relation to our associates whose terms of office have ended. I regret exceedingly that the ties of friendship and good feeling existing between us all are to be severed, and I regret the retirement of these gentlemen from the Board, on the city's account. They have been good and faithful servants, and the city will be fortunate, indeed, if those who are about to fill their places perform their duties with the same fidelity that I believe these gentlemen have. And I regret exceedingly that the people who have the power to form this Board could not have had the same opportunity of an intimate acquaintance with those gentlemen that we have had; for if they could have known and seen them as we who have been associated with them, they certainly would have been with us again another year. I wish, Mr. Chairman, before they depart, to thank them all for the exceedingly kind treatment that I have received at the hands of all of them, and to wish them many years of prosperity and happiness.

Alderman SAYWARD. — I didn't propose to say a single word on this occasion, but as my friend has alluded to the retiring members, it would seem proper that some one should respond, and I, being his next neighbor, and having fought him as hard as any one, take the opportunity to do it. I can say that all my associations with the members of the City Government have, in most cases, been very pleasant, though it isn't to be expected that in four years' experience there should be no clashing. In reference to the resolutions of respect for our Chairman, I heartily concur with the sentiments expressed in them. Though differing with him on many questions, and though sometimes overstepping the bounds of courtesy — although my friend on my right says our debates have been courteous — if I have ever offended any one here, publicly or privately, I am willing to be forgiven. There is one quality in our Chairman which I have particularly admired; when he makes up his mind that he is right, he sticks to it, and that is what I like in any man, even if he differs from me in opinion.

Alderman HULBERT. — I don't know that there ever was a Chairman of a deliberative body who didn't discharge his duties faithfully and with impartiality. I don't believe history furnishes a single instance where it hasn't been done. I can't second this resolution before this body, however, unless permitted to relieve myself of some mental reservations that I have. I suppose my location in the hall has been an unfavorable one, but I have felt during the year that the eye of the Chairman has been upon me most of the time. I have felt as if it had been directed toward me personally. We all know that he has a big eye and a peculiar eye, and as questions of pecuniary importance to the city have come up here, I have felt the standing influence of that eye, and if I have been led into the paths of economy in making expenditures it has been due as much to the influence of that eye as anything else. At any rate, I go out of the Board without a single monument to which my friends can point and say, "He did it." Sometimes it is much to one's credit to bring forward an enterprise, and ever afterward his name is linked with it as the mover of it. If, for that reason, I shall go down into history as a man without a reputation, I question whether it cannot, in part at least, be laid to the eye of our Chairman, whom you regard so impartial. That eye has been upon me, and with all sincerity I can say that it has influenced me very much this year. I feel that I owe largely any influence I may have had to the cautious judgment and consideration of the Chairman of this Board, in connection with committees of which he and I have been members. His constant courtesy to me has won my uniform esteem and regard, and I wish to say here that I feel that the citizens of Boston are to be congratulated that the services of our retiring Chairman are to be retained in this Board during the ensuing year. If there is a man, who, from day to day, studies the interests of the city, it is our Chairman, and no member of this Board has the interest of the city more constantly on his mind than he has. His influence is felt in the right direction. We have it here upon minor matters, and from the beginning to the end of the year his influence has been in the right direction in regard to the city's expenditures. In the year to come it will be a source of satisfaction to me to know that Alderman Cutter is present in this Board and taking part in the discussions to come up. I am not without solicitude in regard to the future of this city. All my utterances have been prompted by a fear for the future interests of the city. I can never feel hereafter as I have in the years that are past. The interests of the city of Boston will feel more dear to me than I ever felt them before, and I wonder now how I could have lived so long here and never felt any more interest in the City Government than I have. It is a wonder to me that citizens of wealth can live so regardless of the interest of the city as they do. I wish, also, to say one thing more; there is a wrong impression among the people of Boston in regard to City Hall. There is an impression that things are all going in the wrong direction here, and that everything is controlled by some ring or other. I take pleasure in saying to-day, that since I have been here I have seen no ring, nor the shadow of a ring. I feel glad to be able to say that the members of this Board are as free as any men can be from anything of that kind, and that the impressions which many persons in the community have with reference to things here are erroneous. While I believe in the dangers which exist, I can testify that I have seen nothing like rings since I have been here.

In closing, I wish to bear testimony to the courtesy of the members of this Board. I came here without any experience in deliberative bodies, and it has been partly on account of their courtesy that I have been enabled to go along through the year without any very great degree of discomfort. It is a matter of very great regret that I must part with gentlemen for whom I have such strong regard — every one of whom going into the next City Government has my entire confidence. Therefore, Mr. Chairman, having relieved myself of all mental reservations, I am willing to second the resolution.

Alderman Emery. — I believe I can freely and conscientiously indorse all that these gentlemen have said with regard to our Chairman as to the manner he has presided over our deliberations during the past year. It is with feelings of sadness that I realize that the sessions of this present Board are so soon to terminate. The pleasant associations and acquaintances here formed have been to me a source of much pleasure, and will long linger in my memory. Could our present associates have continued in service with us who remain for 1874, my labors, it seems to me, would in anticipation be much lightened. Having commenced my labors here only last January, I have had great help and support from the experience of many of my friends here older in service than myself, and whose support and counsel we so soon shall lose. The superintendents of the departments whom we come in contact with are left, and I think their services are invaluable. Indeed, we could not get along without their valuable aid. The services of these gentlemen, and our City Clerk, and Clerk of Committees are all known to be the main wheels and indispensable machinery to the business of the City of Boston.